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**National Highway  
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**CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION  
CALSPAN CASE NO. 95-2  
VEHICLE: 1994 FORD F-150 PICKUP TRUCK  
LOCATION: [REDACTED] MS  
CRASH DATE: [REDACTED] 1994**

Contract No. DTNH22-94-D-07058

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U.S. Department of Transportation  
National Highway Traffic Safety Administration  
Washington, D.C. 20590



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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

# TECHNICAL REPORT STANDARD TITLE PAGE

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16. Abstract <p>This on-site investigation focused on a 1994 Ford F-150 pickup truck that was equipped with a supplemental driver's side air bag system. The full frontal area of the F-150 impacted the rear of a 1988 Chevrolet Corsica in a 12 o'clock/6 o'clock configuration. The impacted crushed the front bumper of the F-150 to a maximum depth of 9.1 cm (3.6") which resulted in a CRASHPC generated velocity change of 19 km/h (12 mph). As a result of the crash, the supplemental driver's side air bag deployed.</p> <p>The driver of the Ford F-150 was a 56 year old male with a height of 180.3 cm (71.0") and a weight of 94.3 kg (208 lbs.) He was initially in a normal driving posture with the driver's seat adjusted to a rearward track position. He was not wearing the manual 3-point lap and shoulder belt system. During the crash sequence, the driver was displaced forward against, or within a close proximity to the air bag module assembly. The air bag system deployed and the module cover flaps and the deploying air bag contacted his chest resulting in multiple internal injuries. He subsequently expired upon arrival to a local hospital.</p> <p>This crash occurred on [REDACTED] 1994, however, notification was not received until [REDACTED] 1995, at which time an on-site investigation was initiated. The Chevrolet Corsica was not available for inspection. A third vehicle involved in the crash was repaired and was not inspected.</p>			
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**CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION**  
**CALSPAN CASE NO. 95-2**  
**VEHICLE: 1994 FORD F-150 PICKUP TRUCK**  
**LOCATION: [REDACTED] MS**

**SUMMARY**

This on-site investigation focused on a three vehicle front-to-rear impact sequence that involved a 1994 Ford F-150 extended cab pickup truck, a 1988 Chevrolet Corsica, and a 1991 Nissan 240 SX. The Ford F-150 pickup truck was equipped with a supplemental driver's side air bag system which deployed as a result of the crash. The 56 year old male driver of the pickup truck was not wearing the manual 3-point lap and shoulder belt. He initiated a forward trajectory into the path of the deploying air bag which impacted his chest resulting multiple abrasions and contusions, bilateral rib fractures, a fractured sternum, transected aorta, pulmonary contusions, liver lacerations, and multiple internal hemorrhages. The driver expired due to these injuries on arrival to a local hospital approximately 30 minutes following the crash.

The 1994 Ford F-150 pickup truck was an extended cab model with the 1.8 m (6') cargo box on an original wheelbase chassis of 352.5 cm (138.8"). The vehicle was equipped with power windows and door locks, a 4-speed automatic overdrive transmission, cruise control, tilt steering wheel, manual 3-point lap and shoulder belts in the four outboard seated positions, center front and center rear lap belts, and the supplemental driver's side air bag system. The vehicle was identified by vehicle identification number (VIN) 1FTEX15N2RK and had an odometer reading of 19,791 km (12,298) miles at the time of the crash.

The crash occurred on a divided four lane roadway on [REDACTED], 1994, during daylight hours. The Ford pickup truck was traveling in an easterly direction on the inboard travel lane at a moderate rate of speed. The Chevrolet Corsica was traveling ahead of the pickup truck as it approached the Nissan 240 SX which was stopped in a line of standing traffic. The driver of the Chevrolet Corsica braked rapidly in an attempt to avoid the stopped Nissan. The driver of the Ford F-150 pickup truck probably braked rapidly in an attempt to avoid the Corsica. The frontal area of the F-150 pickup truck impacted the rear of the Corsica in a 12 o'clock/6 o'clock impact configuration as the vehicles continued forward. The initial impact sequence resulted in a velocity change that was below the threshold required to deploy the F-150's supplemental driver's side air bag system. The Corsica was accelerated forward by the crash and impacted the rear of a stopped 1991 Nissan. The secondary crash resulted in minor damage to the involved vehicles. The F-150 pickup truck subsequently engaged the rear of the Corsica and overrode the vehicle's rear bumper, crushing the sheetmetal area of the Corsica. It was unknown if the Ford F-150 and the Corsica separated following the initial impact sequence or if the vehicles remained engaged and continued forward. The secondary impact sequence resulted in a sufficient longitudinal deceleration which deployed the Ford F-150's supplemental driver's side air bag system.

The Ford F-150 sustained minor impact damage as a result of the front-to-rear impact sequence. Direct contact damage was 139.7 cm (55.0") in length which extended across the bumper face from headlamp to headlamp. Damage from the two impact sequences could not be separated, therefore a single crush profile was documented for the vehicle. Residual crush was 9.1 cm (3.6") located at the mid point of the front bumper. The crush profile across the full width of the bumper face was as follows: C<sub>1</sub> - 4.5 cm (1.75"), C<sub>2</sub> - 2.5 cm (1.0"), C<sub>3</sub> - 6.4 cm (2.5"), C<sub>4</sub> - 6.4 cm (2.5"), C<sub>5</sub> - 3.8 cm (1.5"), C<sub>6</sub> - 2.8 cm (1.1"). Damaged exterior components included the front bumper, plastic grille, and the right front fender. Interior damage was limited to occupant contact damage, compression of the energy absorbing steering column, and deployment of the driver's side air bag system.

The struck Chevrolet Corsica sustained moderately severe rear damage with an estimated crush depth of 30-36 cm (12-14") located at the rear bumper level. The vehicle was salvaged by the insurance company and was not available at the time of this on-site investigation. On-scene police photographs identified minor damage to the frontal area of the Corsica and minor rear damage to the rear of the struck Nissan 240 SX.

The initial impact sequence with the Chevrolet Corsica displaced the unrestrained driver of the Ford F-150 pickup truck forward against, or within a close proximity to the steering wheel and air bag module as the system. As the air bag system deployed, the air bag module cover flaps contacted the anterior chest and upper abdominal area of the driver. His plaid shirt was torn horizontally across the outer edges of the pockets at the lower third level of the pockets. The right pocket was separated from the shirt and a leather type pocket calendar was abraded by the fabric of the air bag. In addition, the driver's tee shirt was torn in the vicinity of the left pocket.

Due to the driver's forward position, the air bag had limited space to deploy. The air bag subsequently loaded against the driver and the air bag module covers. Both the upper and lower surfaces of the bag contained heavy black vinyl transfers from the interior surfaces of the flaps. The asymmetrical upper module cover flap separated from the module at the hinge point due to the inflation of the bag. This flap was not located and was assumed to be discarded at the scene of the crash. The steering wheel spokes had air bag fabric transfers on the face of the spokes adjacent to the module. The 6 o'clock sector of the bag had a pronounced fabric transfer that consisted of black, red, and blue transfers which matched the pattern of the driver's shirt. In addition, the right side of the air bag, forward of the peripheral seam, had a purplish colored fabric transfer that probably resulted from the multicolored shirt of the driver. There was no tears or tissue transfers on the air bag fabric.

The driver's forward trajectory, in combination with the expansion of the air bag between the driver and the steering wheel, compressed the energy absorbing steering column approximately 5.70 cm (2.25"). The left alloy shear bracket was displaced 0.9 cm (0.4") forward and subsequently fractured as the column was driven forward. The separation between the fracture points was 4.8 cm (1.9"). The right shear bracket remained intact and had separated 5.3 cm (2.1") from the fixed shear block. At the base of the steering column was a deformable bracket which was displaced forward

approximately 4.5 cm (1.75"). There was no damage or bending to the four spoke steering wheel which indicates that a uniform loading force was applied to the wheel. This is consistent with the loading pattern from the bag against the steering wheel spokes and the wide area of injury to the driver which extended from the umbilicus to the underside of the chin. The driver's knees contacted and scuffed the knee bolster on each side of the steering column. No injury resulted to the knees from the bolster contact.

The driver was 180.3 cm (71.0") in height with a weight of 94.3 kg (208 lbs.) The driver sustained 31 codeable injuries under the rules of the 1990 Abbreviated Injury Scale (AIS). These ranged in AIS severity from 1-5 and included multiple integumentary and internal injuries. The majority of the injuries appeared to be a direct result of the driver's involvement with the deploying air bag. The external injuries consisted of contusions across the chest and abdomen, left anterior arm, abrasions to the underside of the chin, abrasions and contusions of the anterior neck, abrasions of the tip of the nose, and a shallow laceration of the left forearm. Internal injuries consisted of a contusion and laceration of the transverse mesocolon, bilateral rib fractures 2-9 on the left and 2-8 on the right side, fracture of the sternum, a contusion of the anterior wall of the right ventricle, a transverse tear (transection) of the aorta, bilateral pulmonary contusions, and contusions and lacerations of the liver.

The driver's forehead impacted the metallic trim at the windshield header directly above the steering column. The contact dented the trim and resulted in a contusion with abrasion of the left forehead. There was also an oily smudge on the windshield directly below the forehead contact. The driver probably rebounded into the left B-pillar where he impacted the left posterior parietal region of his scalp resulting in a contusion to this region. There was no evidence of contact from the rebound trajectory of the driver.

The driver was found slumped behind the steering wheel of the pickup truck and was removed from the vehicle by a passing motorist and placed on the edge of the road. He was subsequently transported to a local hospital where he expired approximately 30 minutes following the crash.

The family of the driver noted that he had gallbladder surgery on [REDACTED] 1994, and was involved in a head-on crash with a similar 1994 Ford F-150 pickup truck on [REDACTED] 1994. This crash resulted in severe frontal damage to the vehicle which was written off as a total loss by the insurance company. The F-150 was equipped with an air bag which deployed in that crash. They stated that the driver was not belted during the [REDACTED] crash due the abdominal discomfort that he was experiencing from the surgery. He did sustain several contusions and abrasions of the forearms from the air bag in the crash, however, the air bag prevented him from additional injury. He reportedly exited his vehicle and assisted in directing traffic at the site of the [REDACTED] crash. The driver allegedly purchased the second Ford F-150 (replacement) pickup truck because of the safety benefits of the driver's side air bag system.

**CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION**  
**CALSPAN CASE NO. 95-2**  
**VEHICLE: 1994 FORD F-150 PICKUP TRUCK**  
**LOCATION: [REDACTED] MS**

**CRASH DATA**

Location: U.S. Route on an approach to an intersection

City/Location: [REDACTED] MS

Area/Type: Urban/Commercial

Crash Date/Time: [REDACTED], [REDACTED] 1994, daytime hours

Investigating Police Agency: [REDACTED] Police Department

Crash Type: Car/Car, front-to-rear impact configuration

Air Bag Driver Injury Severity: Fatal (AIS-5)

**AMBIENCE**

Viewing Conditions: Daylight

Weather: Clear

Precipitation: None

Road Surface: Dry

**HIGHWAY**

Type: U.S. Route

Number of Lanes: Four, divided

Surface: Asphalt

## **HIGHWAY (CONT'D.)**

Median:	Grass
Edge:	Curbed with parking lot adjacent to the outboard edge
Vertical Alignment:	Level
Horizontal Alignment:	Straight
Estimated Coefficient of Friction:	.75
Traffic Density:	Moderate to heavy

## **VEHICLES**

	<b><u>Air Bag Vehicle</u></b>	<b><u>Vehicle #2</u></b>
Description:	1994 Ford F-150, 4 x 2 pickup truck with Super (extended) Cab, 353.1 cm (139.0") wheelbase	1988 Chevrolet Corsica, 4 dr. sedan
V.I.N.:	1FTEX15N2RK	Unknown (not inspected)
Color:	Maroon	Beige
Odometer:	19,791.2 km (12,298 miles)	
Engine:	5.0 liter, V-8	
Transmission:	4-speed automatic overdrive, column mounted transmission selector lever	
Steering:	Power-assisted with tilt wheel	
Brakes:	Power-assisted front disc, rear drum with rear anti-lock (ABS)	
Manual Restraints:	3-point lap and shoulder belts in the front and rear outboard seated positions, center lap belts	



## **VEHICLES (CONT'D.)**

### **Air Bag Vehicle**

### **Vehicle#2**

Automatic Restraints: Supplemental Restraint System (SRS) which consisted of a driver's side air bag system which deployed as a result of the vehicle's impact with the rear of vehicle #2

Tow Status: Towed due to damage

Towed due to damage

### **Vehicle #3**

Description: 1991 Nissan 240 SX,  
2 dr. hatchback

V.I.N.: Unknown, not inspected

Color: Black

Tow Status: Towed due to damage

## **VEHICLE DAMAGE**

### **Air Bag Vehicle**

### **Vehicle #2**

Exterior: The 1994 Ford F-150 pickup sustained minor frontal damage from its impact sequence with the rear of vehicle #2. Maximum crush was 9.1 cm (3.6") located at the mid point of the front bumper face below the rub strip, behind the plastic license plate frame. The direct contact damage width was 139.7 cm (55.0") which extended across the bumper and grille from headlamp-to-headlamp. The direct contact damage consisted of abrasions on the bumper rub strip and cracks across the full width of the plastic grille. The combined induced and direct contact damage width was 182.2 cm (71.8") which extended

The Chevrolet Corsica sustained moderately severe damage that was distributed across the rear plane of the vehicle. Maximum crush was estimated at 30-36 cm (12-14") on the rear bumper approximately 30 cm (12") right of center from the on-scene police photographs. In addition to the bumper crush, the face of the truck lid was displaced approximately 20 cm (8") forward from the 6 o'clock impact force.

Damaged components included the rear bumper assembly, trunk lid, both

## **VEHICLE DAMAGE (CONT'D.)**

### **Air Bag Vehicle**

### **Vehicle #2**

#### **Exterior (Cont'd.):**

across the full width of the bumper. Crush values were measured at bumper level and were as follows: C<sub>1</sub>=4.5 cm (1.75"), C<sub>2</sub>=2.5 cm (1.0"), C<sub>3</sub>=6.4 cm (2.5"), C<sub>4</sub>=6.4 cm (2.5"), C<sub>5</sub>=3.8 cm (1.5"), C<sub>6</sub>=2.8 cm (1.1").

Damaged components consisted of the front bumper, bumper rub strip, grille, right headlamp bezel, and the right front fender and door. The right front fender was displaced rearward by the impact forces. During the extrication of the driver, rescue personnel opened the right door and the leading edge of the door contacted and deformed the trailing edge of the fender. In addition, the leading edge of the right door was damaged.

taillamp lenses, the quarter panels, and the backlight glazing.

The frontal area of the Chevrolet Corsica impacted the rear of the stopped Nissan which resulted in minor damage to the grille, headlamps, and hood.

CDC:

12-FDEW-1

06-BDEW-2  
12-FDMW-1

### **Vehicle #3**

The rear of the Nissan 240 SX minor damage from its impact sequence with the Chevrolet Corsica. Direct contact damage was distributed across the rear bumper fascia of the Nissan. There was no damage to the taillamp lenses or hatchback of the vehicle.

CDC:

06-BDEW-1

## **VEHICLE DAMAGE (CONT'D.)**

### **Interior (Air**

**Bag Vehicle):** The interior of the 1994 Ford pickup truck sustained moderate damage that was associated with air bag deployment and driver contact. There was no intrusion or damage related to the exterior deformation. Damage related to the deployment of the air bag is addressed in the section which follows entitled "Automatic Restraint System".

The driver's left knee contacted the mid instrument panel at the base of the vent louver and the fuse box cover that was incorporated into the knee bolster. The knee contact scuffed the components 64.1-71.1 cm (25.25-28.0") left of the vehicle's centerline and 17.1-20.3 cm (6.75-8.0") below the chrome trim which separated the mid and upper instrument panels. His right knee scuffed the knee bolster 25.4-30.5 cm (10.0-12.0") left of the centerline and 20.3-22.9 cm (8.0-9.0") below the referenced trim strip. There was no internal damage to the bolster as documented in Photograph No. 21 of Attachment B.

The driver was positioned against or within a close proximity of the air bag module as the SRS deployed. His loading force in response to the frontal impact sequence and the subsequent expansion of the air bag between the driver and the steering assembly resulted in compression of the energy absorbing steering column. The left side shear bracket was displaced 0.95 cm (0.375") forward, however, the alloy shear bracket fractured as the column continued forward. The right shear bracket remained intact and disengaged 5.4 cm (2.125") from the block. The energy absorbing steering column consisted of a deformable bracket that was identified by the following Ford Part No.: [REDACTED]

The deformable bracket was displaced approximately 4.4 cm (1.75") forward. The shear capsule separation/compression and the deformable bracket displacement are depicted in Photograph Nos. 42-44 of Attachment B.

The driver's left hand probably impacted the radius of the upper instrument panel directly forward of the steering assembly. A vertically orientated gouge mark (possible ring contact) was located on the panel 59.7-63.5 cm (23.5-25.0") left of the vehicle's centerline. In addition, the driver's forehead area impacted the windshield header, windshield, and possibly the leading edge of the left sunvisor. A small diameter dent that was approximately 1.6 mm (0.0625") in depth evidenced the head contact to the metal header trim panel. The dent was located 43.2-45.7 cm (17.0-18.0") left of the centerline. Located directly below the header contact point was an oily smudge (probable skin oil) on the windshield that was located 41.3-45.7 cm (16.25-18.0") left of center and 2.5-7.0 cm (1.0-2.75") below the header.

## **VEHICLE DAMAGE (CONT'D.)**

### **Interior (Air**

**Bag Vehicle):** The left sunvisor was probably contacted by the driver's forehead or the anterior aspect of his scalp. There was no compression of the visor, however, its location with respect to the header contact point presented itself as a probable contact point. There appeared to be a faint scuff/transfer (possible tissue transfer) on the sunvisor in Photograph No. 15 that was located above the header contact point and to the left of the elastic band. It should be noted that this scuff did not appear visible during our inspection of the vehicle which occurred on [REDACTED] 1995.

The rear view mirror was found to be displaced in an upward direction and to the right which possibly resulted from driver right hand/arm contact. There was no damage to the mirror glass or to the frame of the mirror assembly. The driver sustained soft tissue injuries of the scalp over the left posterior and parietal areas. Although no direct contact evidence was visible within the vehicle, the driver possibly rebounded into the left B-pillar mounted D-ring for the driver's side manual restraint system.

## **AUTOMATIC RESTRAINT SYSTEM**

The 1994 Ford F-150 pickup truck was equipped with a driver's side air bag Supplemental Restraint System (SRS) which deployed as a result of the Ford's frontal impact sequence with rear of vehicle #2. The SRS consisted of two front mounted crash sensors, an instrument panel mounted safing sensor and diagnostic module, the steering wheel mounted air bag module and clockspring switch, and the instrument cluster mounted air bag system indicator lamp. The front crash sensors, safing sensor, and the diagnostic module were not damaged as a result of the crash. The driver's air bag module, however, was damaged as a result of SRS deployment.

The air bag module consisted of an asymmetrical flap design which opened at the designated tear points in an H-configuration. The large upper flap was separated from the module at the upper hinge point and was not within the vehicle at the time of Calspan's inspection of the pickup truck. Previous investigations of Ford product vehicles have indicated that the upper flap has a horizontal width of 20.3 cm (8.0") and a height of 12.4 cm (4.875"). The lower module cover flap was intact and had respective measurements of 20.3 cm (8.0") and 3.8 cm (1.5").

The air bag was constructed of a woven nylon fabric with a neoprene type liner and was approximately 61.0 cm (24.0") in diameter in its deflated state. The air bag was tethered by four internal tether straps which extended from a 16.5 cm (6.5") diameter reinforcement that was sewn to the center of the bag with two rows of external stitching. The peripheral seam of the air bag was an internal seam and was sewn with an internal and external row of stitching. The bag was vented by two vent ports that were approximately 3.2 cm (1.75") in diameter and were located on the back side of the bag at the 11:30 and 01:30 o'clock positions.

## **AUTOMATIC RESTRAINT SYSTEM (CONT'D.)**

The driver of the vehicle was in a forward position either against or within a close proximity of the air bag module as the SRS deployed. This forward position of the driver restricted the deployment of the air bag as upper module cover flap contacted his chest. The expanding air bag subsequently pushed against the interior surfaces of the cover flaps and the side surfaces of the backer plate for the gas generator. As a result of bag expansion between the driver and the steering wheel mounted module assembly, the upper module cover flap separated from the module at the upper hinge point. The separated cover flap was not within the vehicle at the time of our inspection and was assumed to have been discarded at the scene of the crash. Black vinyl transfers at the 12 o'clock position of the air bag evidenced the interaction between the bag and the cover flap (refer to Photograph Nos. 27-29). The interior aspect of the lower module cover flap contained a patterned air bag fabric transfer with a corresponding black vinyl transfer on the bag fabric at the 6 o'clock sector located between the peripheral seam and the gas generator. In addition, patterned air bag fabric transfers were noted to the inboard aspect of the upper left steering wheel spoke at the horn button and to both lower spokes of the four spoke wheel. The expanding air bag also deformed the lateral brackets of the air bag module backer plate and displaced and fractured the plastic cruise control switches that were mounted between the spokes of the steering wheel. There were no tears, rips, or snag points to the woven fabric of the air bag.

A black vinyl transfer was noted to the right side surface of the bag and was located forward of the peripheral seam. The transfer began 10.2 cm (4.0") below the right vent port and extended approximately 30.4 cm (12.0") downward and 6.4-15.2 cm (2.5-6.0") forward of the seam toward the generator. There were color transfers from the driver's plaid shirt on the air bag at the 3 and 6 o'clock sectors. A large purplish transfer was located on the right side of the air bag which began 22.2 cm (8.75") below the right vent port and extended downward approximately 22.9 cm (8.75"). The upper edge of the transfer was 4.4-12.1 cm (1.75-4.75") forward of the peripheral seam while the lower edge began at the seam and extended 10.2 cm (4.0") forward. In addition, there was a patterned blue, red, and black shirt fabric transfer on the air bag at the 6 o'clock position. The vertically orientated transfer (refer to Photograph No. 24) was located 4.4 cm (1.75") forward of the peripheral seam and was 7.0 cm (2.75") in height and 9.5 cm (3.75") in width.

## **MANUAL RESTRAINT SYSTEM**

The Ford pickup truck was equipped with 3-point lap and shoulder belts at the four outboard seated positions and lap belts at the center front and center rear positions. The vehicle was occupied by a single occupant, therefore this section focuses solely on the manual belt system for the driver's position.

The belt system consisted of a continuous loop webbing that extended from a B-pillar mounted inertia reel retractor, through a B-pillar mounted D-ring (upper pivot point), and anchored to the sill of the vehicle forward of the B-pillar. The exposed D-ring was chrome plated while the anchorage bolt and pivot point were covered with a snap-on type plastic cap which remained in place during the crash. A sliding latchplate was positioned on the webbing on the downstream side of the D-ring. The male

## **MANUAL RESTRAINT SYSTEM (CONT'D.)**

tab of the latchplate yielded several faint wear marks (scratches) which indicated that the belt system had been worn on occasions prior to this crash. The latchplate was stamped with identification number [REDACTED]. At the time of Calspan's inspection of the vehicle which occurred approximately 4.5 months after the crash, the latchplate was found adjusted to a position that was approximately 10.2 cm (4.0") below the D-ring and 99.1 cm (39.0") above the floor anchorage point.

The belt webbing was in new condition with no evidence of occupant loading or transfers from the air bag module cover flaps or bag fabric. Based on the interior contact points within the vehicle and the lack of loading evidence on the belt system, it was determined that the driver was not wearing the manual restraint system at the time of the crash. Family members stated that the driver was a dedicated belt user, however, they confirmed the lack of belt usage during this crash by the driver at a discussion which transpired following the vehicle inspection. They noted that the driver had undergone gallbladder surgery on [REDACTED] 1994, and that the surgery produced abdominal discomfort. In addition, the discomfort was enhanced by the manual seat belt in the pickup truck. The driver was involved in a severe head-on crash with a similar 1994 Ford F-150 pickup truck on [REDACTED], 1994. He was not belted during that crash and attributed his injury mitigation to the driver's side air bag which deployed. The involved pickup truck was considered a total loss by the insurance company, therefore the driver replaced the vehicle with this accident involved F-150 pickup truck. The family members noted that the abdominal discomfort persisted throughout the month of this accident and that the driver refrained from using the manual belt system to alleviate the discomfort while driving.

## **VEHICLE VELOCITY ESTIMATES**

	<b><u>Air Bag Vehicle</u></b>	<b><u>Vehicle #2</u></b>
<b>Total Delta V:</b>	19 km/h (12 mph)	30 km/h (18 mph)
<b>Longitudinal Delta V:</b>	-19 km/h (-12 mph)	30 km/h (18 mph)
<b>Lateral Delta V:</b>	0 km/h (0 mph)	0 km/h (0 mph)
<b>Energy Absorption:</b>	26,414 joules (19,480 ft-lb)	49,169 joules (36,260 ft-lb)

## **COLLISION SEQUENCE**

**Pre-Crash:** The crash occurred on the inboard eastbound travel lane of a four lane divided roadway on an approach to an intersection in a 64 km/h (40 mph) speed zone. Eastbound traffic flow had reportedly backed-up for the intersection. Vehicle #3, the 1991 Nissan 240 SX, was stopped on the inboard travel lane for standing eastbound traffic. Vehicle #2, the 1988 Chevrolet Corsica was traveling eastbound on the inboard travel lane as it approached the rear of the stopped Nissan. The air bag equipped Ford F-150 was traveling eastbound and was following the Chevrolet Corsica on the inboard travel lane. The Corsica and the F-150 pickup truck probably approached the impending crash site at similar speeds as the vehicles were traveling in an area of moderate-to-heavy traffic volume. The driver of vehicle #2 apparently failed to detect the stopped Nissan in sufficient time to safely stop her vehicle behind the Nissan. She applied a rapid braking force in an attempt to avoid contact as the Corsica continued forward in a tracking mode. The driver of the Ford F-150 pickup truck subsequently braked rapidly in an attempt to avoid contact with the Corsica. The on-scene police photographs of the crash site did not yield evidence of locked wheel skidding from the Chevrolet Corsica. The Ford F-150 was equipped with rear anti-lock (ABS) brakes which would have contributed to maintaining a tracking orientation of the vehicle under heavy braking. The police photographs were inadequate to identify the level of braking by the driver of the Ford pickup truck.

**Crash:** The investigating police officer reported that the Chevrolet Corsica initially impacted the rear of the stopped Nissan 240 SX and that the Ford F-150 subsequently impacted the rear of the Corsica. Based on a review of the on-scene police photographs of the Corsica and the Nissan 240 SX, which are included as Attachment A of this report, a thorough inspection of the Ford F-150 pickup truck, and reconstruction of the driver's kinematics based on contact evidence and injury data, a more complex crash occurred involving the three vehicles.

The driver of the Chevrolet Corsica was braking and decelerating her vehicle in an attempt to avoid impact with the stopped Nissan 240 SX. The driver of the Ford F-150 pickup truck, which was initially traveling at a speed similar to the Corsica, detected the braking efforts by the driver of the Corsica and probably applied a rapid braking force in an attempt to avoid impact with the Corsica. The pickup truck's subsequent braking effort allowed the F-150 to close the gap distance between the two vehicles. The Corsica had been under a braking force for a longer time frame, therefore the vehicle had probably decelerated to a lower speed than the pickup truck.

The front bumper of the F-150 pickup truck initially impacted the rear bumper of the Corsica in a 12 o'clock/6 o'clock impact configuration. As a result of the initial impact, both bumpers deformed and the right bumper bracket of the F-150 dented the rear bumper of the Corsica at a location that was outboard of the right backup light lens. The impact resulted in a longitudinal velocity change to the pickup truck that was below the required threshold for air bag deployment. In addition, the impact probably accelerated the Corsica to the speed of the F-150 pickup truck as the two vehicles continued forward. It was unknown if the vehicles remained engaged or separated following the impact sequence. This initial impact sequence displaced the driver of the Ford F-150 forward and possibly reduced his braking effort.

## **COLLISION SEQUENCE (CONT'D.)**

### **Crash (Cont'd.):**

The driver of the Chevrolet Corsica continued to brake following the initial impact. Her vehicle subsequently impacted the rear of the Nissan 240 SX in a 12 o'clock/6 o'clock impact configuration. The front bumper of the Corsica underrode the rear bumper of the Nissan which allowed the Corsica's headlamp and grille area to impact the rear bumper fascia of the Nissan and the hood face of the Chevrolet to contact the filler panel of the Nissan between the reflective lens and the bumper fascia. Residual damage was minimal, however, the impact probably compressed the Nissan's energy absorbing bumper.

The impact probably displaced the Nissan forward as the Ford F-150 pickup truck subsequently engaged with the rear of the Corsica. This secondary impact resulted in an override configuration as the F-150's front bumper impacted the taillamp and sheetmetal area above the Corsica's rear bumper and the grille area engaging with the face of the trunk lid. (It was possible that the bumpers initially engaged prior to the override sequence). The vertical member of the F-150's plastic grille contacted the face of the trunk lid and dented the trunk lid right of the key lock mechanism while the right grille and headlamp area engaged with the right side of the trunk lid at the Corsica name tag. This contact dented the trunk face and cracked the right vertical aspect of the headlamp bezel and buckled the right front fender of the pickup truck. The horizontal crease along the top surface of the trunk (Photograph Nos. 5 & 6 of Attachment A) resulted from engagement with the top surface of the F-150's grille and bug shield.

As a result of the secondary impact sequence between the Corsica and the Ford F-150 pickup, the supplemental driver's side air bag system of the F-150 deployed. The specific damage that resulted from each of the two impacts could not be separated from the overall damage patterns, therefore velocity changes were computed by the CRASHPC program based on these overall damage patterns. The damage mode of CRASHPC generated velocity changes of 19 km/h (12 mph) for the Ford F-150 and 30 km/h (18 mph) for the Chevrolet Corsica. It should be noted that these velocity estimates were based on the actual documented crush profile of the F-150 and an estimated crush profile for the Corsica. The time sequence between the two impacts with the F-150 and the Corsica could not be accurately determined, however, it was brief as the driver was displaced forward, either against or within a close proximity to the air bag module as the SRS deployed.

**Post-Crash:** The driver of the Nissan 240 SX brought his vehicle to a controlled stop within the inboard eastbound travel lane forward of the point of impact with the Corsica. He was reported as belted and not injured. The Corsica came to rest centered within the inboard eastbound travel lane at or near its impact location with the Nissan. Final rest was determined by the position of the vehicle in relation to debris visible on the road surface in Photograph No. 7 of Attachment A. The female driver of the Chevrolet Corsica was reported as belted with a complaint of pain from the impact sequences. The driver of the Ford F-150 pickup truck sustained multiple internal injuries and was found slumped behind the steering wheel of his vehicle by a passing motorist. He was removed from the vehicle and placed on the median. Rescue personnel subsequently responded to the crash scene and transported the driver of the F-150 pickup truck to a local hospital where he expired.



## **HUMAN FACTORS/OCCUPANT DATA**

### **Air Bag Vehicle**

Driver: 56 year old male  
Height: 180.3 cm (71.0")  
Weight: 94.3 kg (208 lbs.)  
Manual Restraint  
System Usage: None, 3-point lap and shoulder belt was available  
Usage Source: Vehicle inspection, police report, interview with family members  
Eyewear: Prescription eyeglasses, separated from face during crash and were not damaged  
Vehicle Familiarity: 3-4 months  
Route Familiarity: Unknown  
Trip Plan: Business related  
Mode of Transport  
From Scene: Ambulance  
Type of Medical  
Treatment: Transported to a local hospital where he expired

## **DRIVER INJURIES**

<b>INJURY</b>	<b>SEVERITY</b>	<b>SOURCE</b>
Contusion hemorrhage of the transverse mesocolon, 10 x 8 cm with 2 cm laceration and in the mesentery, 12 x 6 cm	Moderate (542010.28 542022.28)	Deploying air bag
2-9 ribs are fractured anteriorly and anterolaterally on the right side and 2-8 ribs fractured on left anterolaterally, left pleural space contains 1600 ml of blood	Critical (450242.53)	Module cover flaps and the deploying air bag
Sternum fracture at second intercostal level with hemorrhage at the fracture lines	Moderate (450804.24)	Upper air bag module cover flap
Contusion of tissue and subcutaneous tissue of the right forearm from wrist to elbow, 21.6 x 7.0 cm (8.5 x 2.75")	Minor (790402.11)	Expanding air bag

Contusion hemorrhage in anterior wall of right ventricle at the base 3 x 1 cm x 0.6 cm deep affecting the epicardial fat and extending into the underlying muscle in a diffuse pattern 4 x 3 cm where there are patchy hemorrhages extending to the endocardium	Severe (441006.44)	Upper air bag module cover flap
Transverse tear of the aorta (transected) 5 mm distal to the left subclavian branch totally around the circumference 5.3 cm, with an opening in the left side of the mediastinum 2.5 x 2 cm	Critical (420210.54)	Upper air bag module cover flap
Contusion hemorrhages of the lungs, left extending into lung tissue superficially 1 cm, covering an area 6 cm in diameter on left, 5 cm on the right	Severe (441410.43)	Upper air bag module cover flap and the deploying air bag
Contusion hemorrhages of the inferior capsule of the liver on both sides adjacent to the caudate and lobe and inferior right lobe	Moderate (541810.21)	Upper air bag module cover flap and the deploying air bag
Small tears of liver tissue 3 and 2 cm with hemorrhage into the adrenal glands	Moderate (541822.22)	Upper air bag module cover flap and the deploying air bag
Contusion hemorrhage with overlying abrasion of left forehead 7.6 x 4.4 cm (3 x 1.75") with adjacent abrasion on left cheek 2.5 x 0.6 cm (1 x 0.25")	Minor (290402.17, 290202.12)	Air bag
1.5 cm abrasion to the tip of the nose	Minor (290202.14)	Air bag
Hemorrhages present in the deep layers of the scalp, multiple contusions and abrasions of scalp	Minor (190402.10, 190202.10)	Probable rebound contact into the left B-pillar
Contusion over the left posterior parietal region of scalp 2.5 x 1.3 cm behind the ear canals centered 2.5 cm to left of superior midline, 2.5 x 0.6 cm in diameter with dark contusion hemorrhage in the skin and subcutaneous tissues	Minor (190402.16)	Probable rebound contact into the left B-pillar

Hemorrhages in the deep tissue of the neck along left carotid sheath, multiple contusions and abrasions of neck	Minor (390402.15, 390202.15)	Air bag
Contusion hemorrhage in the adrenal glands	Minor (540210.19)	Upper air bag module cover flap and the deploying air bag
Contusion over the sternum, 12.7 x 8.9 cm (5 x 3.5")	Minor (490402.14)	Upper air bag module cover flap
Band of contusion across upper abdomen from the umbilicus upward 7.6-10.2 cm wide extending from right axillary line to the left mid clavicular line reaching the costal margins, but not affecting lower abdomen	Minor (590402.17)	Lower module cover flap and the deploying air bag
5.1 cm abrasion under chin	Minor (290202.18)	Air bag
Abrasion over left chest area 3.8 cm down left chest across the costal margin (12.7 x 5.1 cm) and on the anterior right lower chest at the costal margin (7.6 x 5.1 cm)	Minor (490202.12)	Upper air bag module cover flap and the deploying air bag
5.1 cm (2") contusion of right lower anterior chest	Minor (490402.11)	Upper air bag module cover flap and the deploying air bag
7.6 x 5.1 cm contusion of left anterior arm onto medial aspect	Minor (790402.12)	Deploying air bag
Contusion with abrasion on the anteriomedial aspect of the right thigh, diagonal (12.7 x 7.6 cm)	Minor (890402.11, 890202.11)	Lower steering wheel rim
1.3 cm contusion on medial right lower thigh	Minor (890402.11)	Lower steering wheel rim
1.3 cm contusion medial left upper thigh	Minor (890402.12)	Lower steering wheel rim
Shallow laceration of left forearm on the posteromedial aspect 10.2 cm above elbow 1.3 x 0.2 cm in width with 3.8 x 1.3 cm abrasion	Minor (790602.12, 790202.12)	Deploying air bag (possible)

## **DRIVER KINEMATICS**

The driver of the 1994 Ford F-150 pickup truck was a 56 year old male with a reported height of 180.3 cm (71.0") and weight of 94.3 kg (208 lbs.). Based on contact evidence within the vehicle, the driver was probably in a normal driving posture prior to impact. The driver's seat track was adjusted 2.5 cm (1.0") forward of the full rearward position and the tilt steering wheel appeared to be adjusted to the center position. Family members stated that the driver of the F-150 had gallbladder surgery on [REDACTED], 1994, and that he was experiencing continued discomfort in the abdominal area, therefore he elected not to wear the manual 3-point lap and shoulder belt system to alleviate the belt pressure across his abdomen. They further reported that the driver was involved in a severe head-on crash with a similar 1994 Ford F-150 pickup truck on [REDACTED] 1994. He was not restrained by the manual belt system, however, the supplemental driver's side air bag system deployed which prevented the driver from possible serious injury. The involved pickup truck was considered a total loss and was replaced by this accident involved vehicle.

As stated in the crash phase of the Collision Sequence of this report, the driver was in a forward position with his chest within a close proximity, or against the air bag module cover as the SRS deployed. The initial impact with the rear of the Chevrolet Corsica displaced the driver forward, however, the impact was not of sufficient magnitude to deploy the driver's side air bag system. The driver remained in the forward position as the Ford F-150 engaged with the rear of the Corsica, which resulted in a velocity change that was sufficient to deploy the air bag system.

As the air bag system deployed, the air bag module cover flaps contacted the driver's chest as he initiated a forward trajectory in response to the impact force and loaded against the module cover and steering assembly. The driver's knees contacted and scuffed the knee bolster and the left mid instrument panel. No injury resulted from the bolster contact. His forward and upright position momentarily restricted the normal deployment pattern of the air bag as the bag inflated against the module assembly. This was evidenced by the air bag fabric transfers on the inside surface of the lower cover flap with corresponding black vinyl transfers on the bag from the upper and lower flaps, complete separation of the upper flap at the hinge point, and transfers on the left horn button and steering wheel spokes.

The driver's loading force against the steering assembly and the air bag module, in combination with the deploying air bag expanding against his chest, produced compression of the energy absorbing steering column. The deformable bracket of the energy absorbing column was displaced 4.4 cm (1.75") forward. Compression of the steering column resulted in complete separation of the shear capsules. The left side alloy bracket fractured and the right had separated 5.4 cm (2.1").

The horizontal edge of the asymmetrical (H-configuration) upper module cover flap and the expanding air bag impacted the mid thoracic area of the driver. The flap and air bag tore the driver's shirt in a horizontal pattern as it opened in an upward direction. The tear extended across the shirt for approximately 35.6 cm (14.0") at the lower third level of the pockets. The right pocket was completely separated from the shirt. The black, red, and blue colors of the driver's plaid shirt

## **DRIVER KINEMATICS (CONT'D.)**

transferred on the air bag at the 6 o'clock sector (refer to Photograph No. 24). In addition to the shirt damage, the driver had a leather bound pocket calendar in one of the shirt pockets. The side of the leather calendar that was exposed to the air bag had a white transfer from the air bag fabric that was both patterned and irregular (refer to Photograph Nos. 54 and 55 of Attachment B). Fabric fibers from the driver's plaid shirt were embedded into the leather calendar in the area of the air bag transfer. The driver's T-shirt was also torn in an irregular pattern over the left chest area.

The initial impact from the upper module cover flap and the expanding air bag produced an area of contusion that measured 12.7 x 8.9 cm (5.0 x 3.5") over the sternum, multiple abrasions and contusions across the chest, a fracture of the sternum at the second intercostal space, multiple bilateral rib fractures, a transverse tear (transection) of the aorta, a contusion hemorrhage of the right ventricle, bilateral pulmonary contusions, contusions and lacerations of the liver, and contusions of the adrenal gland. The lower module cover flap in combination with the expanding air bag produced a band of contusion across the upper abdomen, a contusion of the transverse mesocolon, and a laceration of the mesentery.

Due to the driver's forward position, the expanding air bag separated the upper module cover flap at the upper hinge point. The bag subsequently contacted the driver's neck and face producing multiple contusions and abrasions of the neck, an abrasion to the under side of the chin, an abrasion to the tip of the nose, and abrasions of the left face and forehead. In addition, the expanding air bag probably displaced the driver in an upward and rearward direction. His forehead or anterior scalp contacted the windshield and the header trim directly above the steering assembly. An oily smudge evidenced the windshield contact while a small diameter dent evidenced the header contact. His upward trajectory allowed his thighs to contact the lower steering wheel rim which resulted in bilateral contusions to the anterior and medial aspects of the thighs.

The driver's arms were subsequently contacted by the expansion of the air bag. As a result, he sustained a large area of contusion to the right forearm, a contusion of the anterior aspect of the left arm, and a laceration with abrasion of the left forearm.

The driver was displaced rearward into the left seat back by rebound and expansion of the air bag system. Although not supported by direct contact evidence, the left posterior aspect of the driver's scalp probably impacted the left upper B-pillar during his rebound trajectory. The autopsy report identified an area of contusion and abrasion over the left posterior parietal region of his scalp with hemorrhages present in the deep layers of the scalp. The location and contusion injuries supports an impact that probably resulted from the rebound trajectory.

The driver was reportedly found by a passing motorist slumped behind the steering wheel of the vehicle. He was removed from the vehicle and placed on the median. Rescue personnel subsequently transported him to a local hospital where he expired following arrival.

**ATTACHMENT A**

**On-Scene Police Photographs**



1. Lookback view of the crash site.



2. Frontal damage to the Ford F-150 pickup truck.





3. Overall view of the Ford's interior and the deployed driver's side air bag.



4. Close-up view of the deployed air bag and the separated upper module cover flap.





5. Rear damage to the Chevrolet Corsica.



6. Close-up view of the rear damage to the Corsica.





**7. Approximate final rest position of the Chevrolet Corsica.**



**8. Frontal damage to the Corsica from secondary contact with the Nissan 240 SX.**



**9. Rear damage to the bumper fascia of the Nissan 240 SX.**

**ATTACHMENT B**

**Selected Color Photographs**





1. Frontal view of an exemplary 1994 Ford F-150 Super Cab pickup truck.



2. Profile view of the exemplary vehicle.





3. Frontal damage to the involved 1994 Ford F-150 pickup truck.



4. Left front three-quarter view.





5. & 6. Profile views at the left front corner documenting the extent of crush.





7. Left side view of the Ford F-150 pickup truck.



8. Left rear three-quarter view.





9. Right rear three-quarter view.



10. Right side view and displacement of the right front fender.





11. & 12. Profile views at the right front corner documenting the extent of crush.





13. Right front three-quarter view.



14. Vehicle identification label on the left B-pillar.



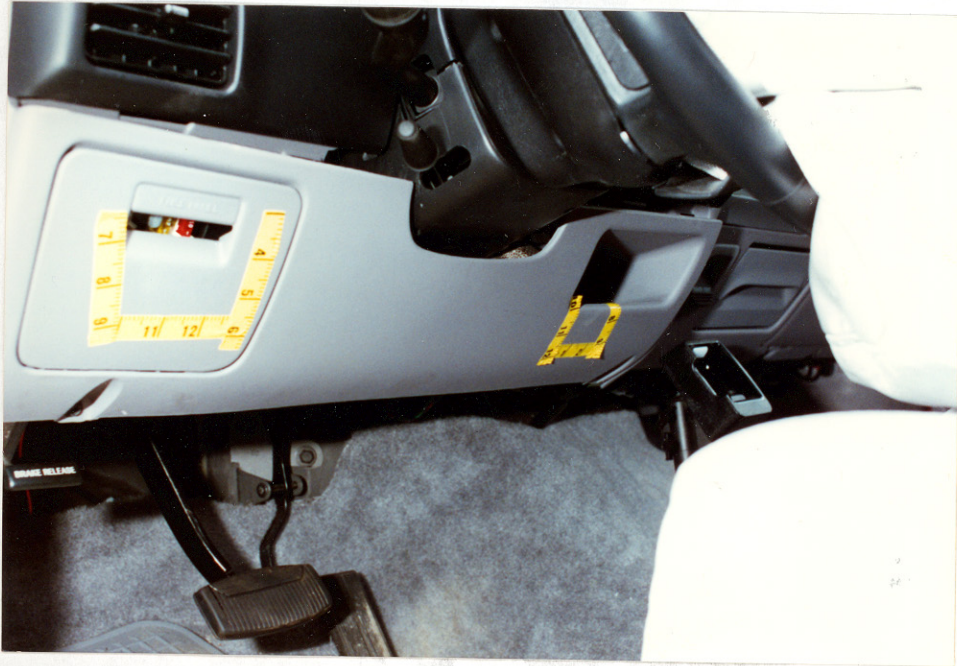


15. Overall view of the driver's trajectory and contact points.



16. Driver's knee contacts to the bolster and mid instrument panel.





17. & 18. Close-up views of the left knee contact.





19. Right knee contact (scuff) to the bolster.



20. Bolster removed from vehicle.





21. Back side of bolster, no damage.



22. Deployed driver's side air bag.





23. Black vinyl transfers at the 6 o'clock sector from the lower module cover flap.



24. Driver's shirt fabric transfers on the air bag at the 6 o'clock sector.





25. Fabric transfers on the right side of the air bag forward of the peripheral seam.



26. Black vinyl transfers at the 12 o'clock sector from the upper module cover flap.



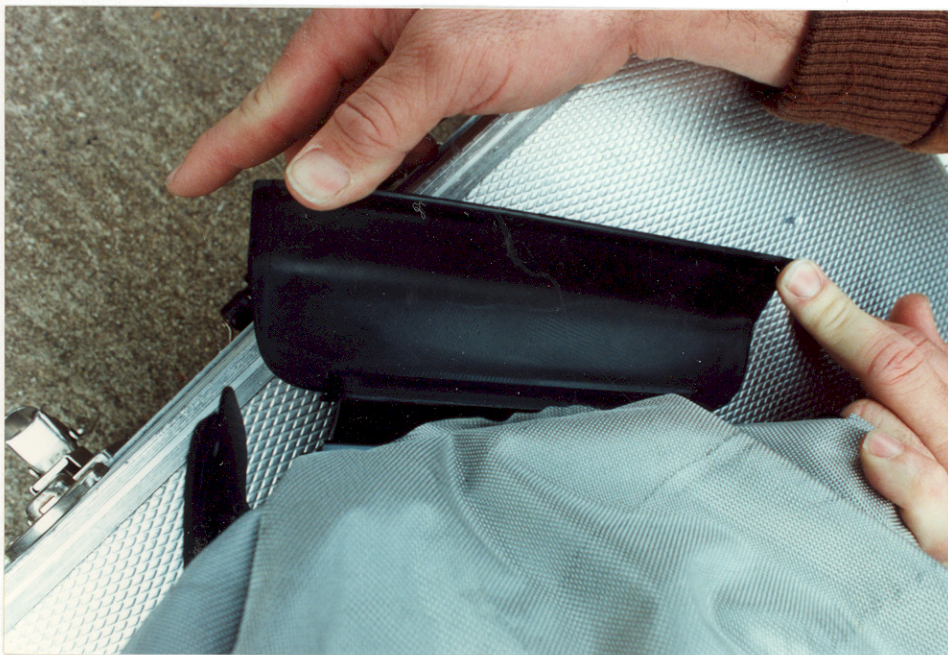


27. & 28. Separated upper module cover flap.



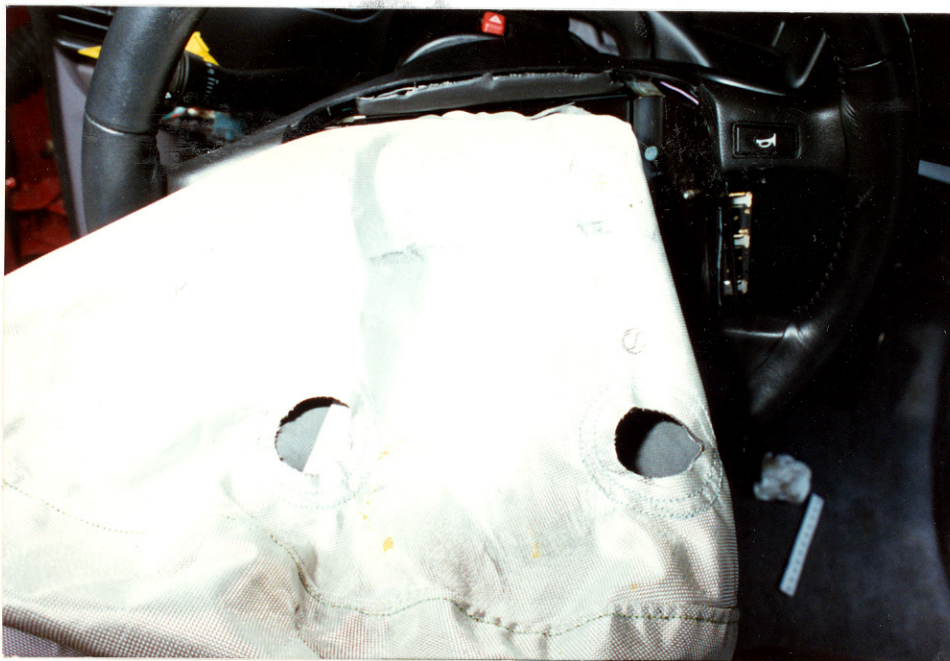


29. Upper flap vinyl transfers and vent ports.

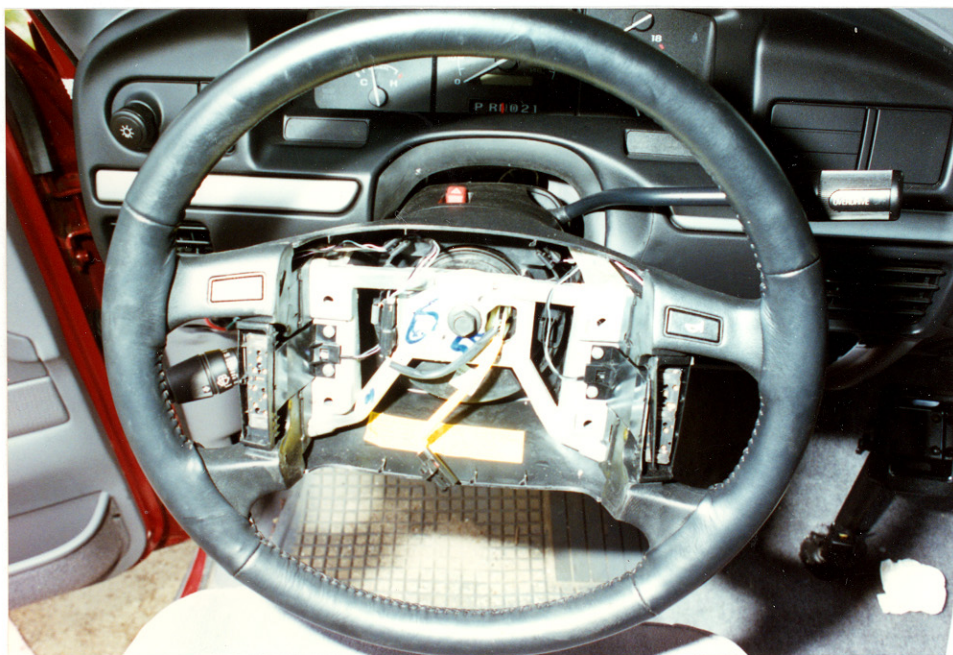


30. Air bag fabric transfers on the inner surface of the lower flap.





31. Additional view of the separated upper module cover flap.



32. Steering wheel hub and spokes with air bag removed.

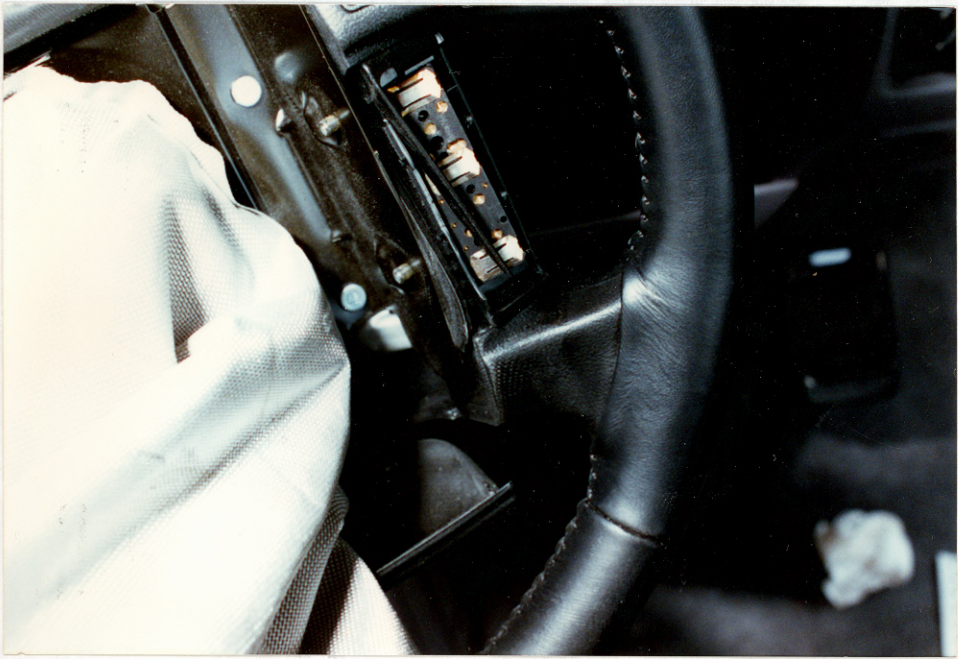


33. Air bag fabric transfer on the left upper steering wheel spoke.



34. Displaced cruise control switches and fabric transfer on the left lower spoke.





35. Damaged right cruise control switches and fabric transfers to the right lower spoke.

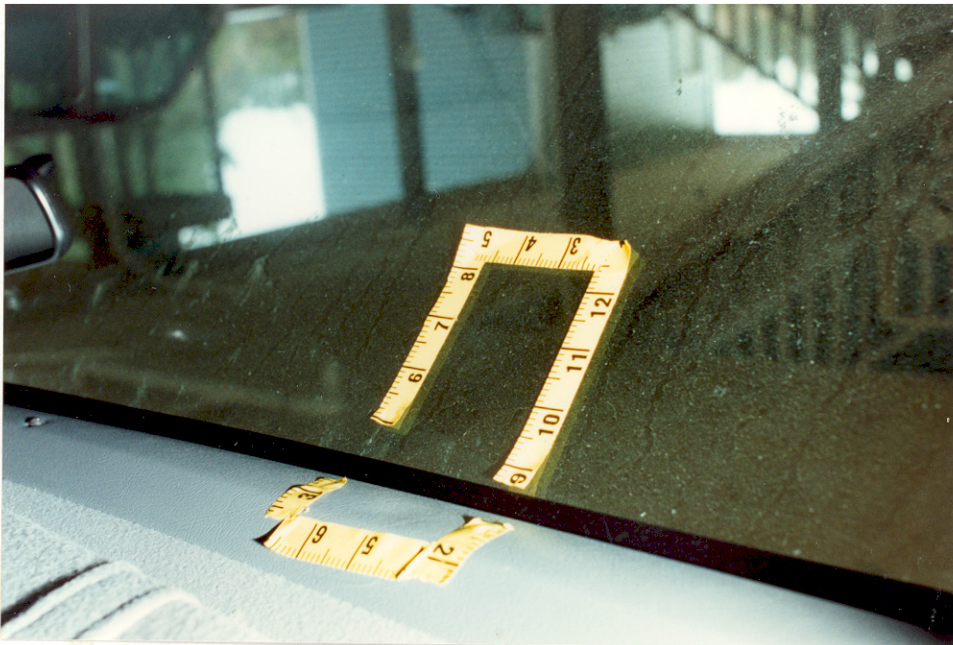


36. Perpendicular view of the steering wheel rim.





37. Driver's forehead contact to the windshield header and windshield.



38. Close-up view of the head contacts.





39. Probable contact from the separated upper module cover flap.

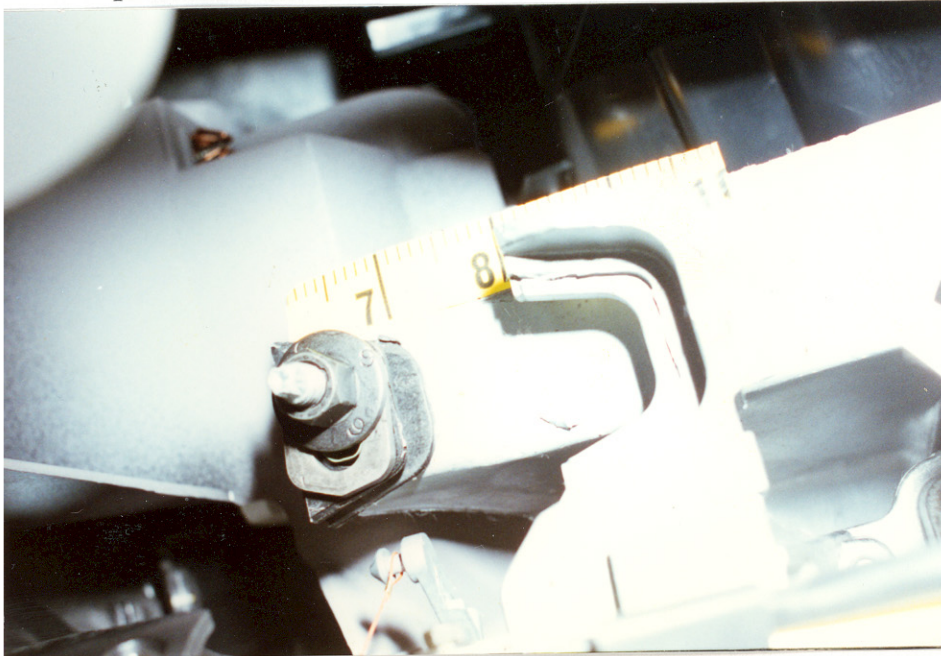


40. Driver's seat track adjustment with respect to the steering assembly.





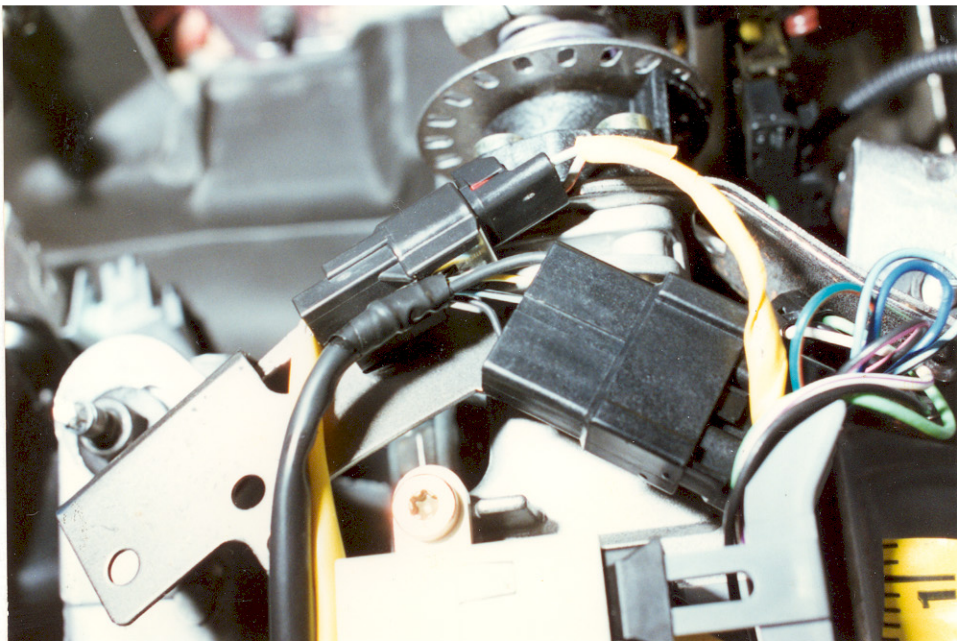
41. Stowed position of the driver's side manual 3-point lap and shoulder belt system.



42. Compression of the right side steering column shear capsule.

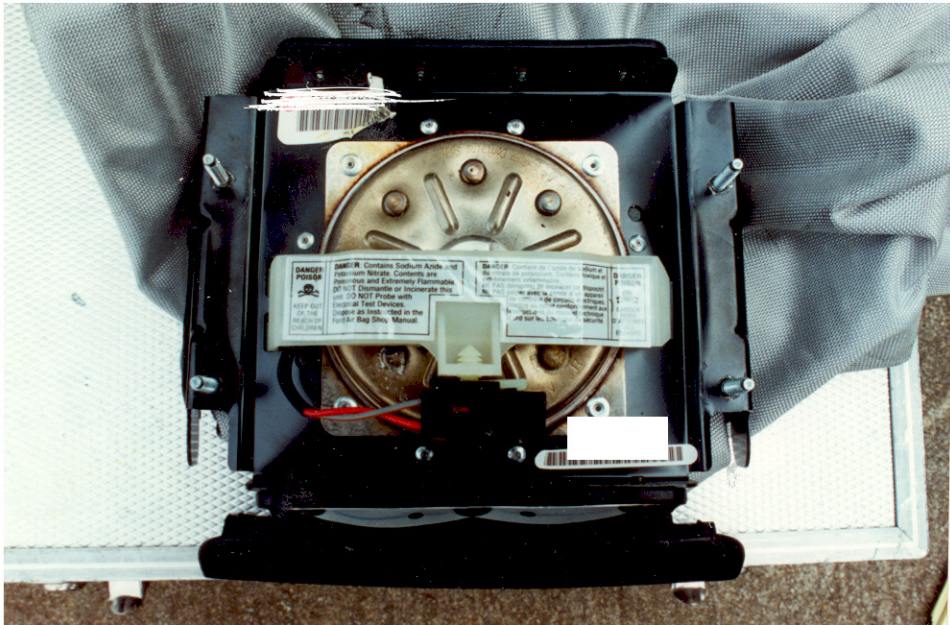


43. Fractured left side shear capsule alloy bracket.



44. Deformable bracket at the base of the energy absorbing steering column.



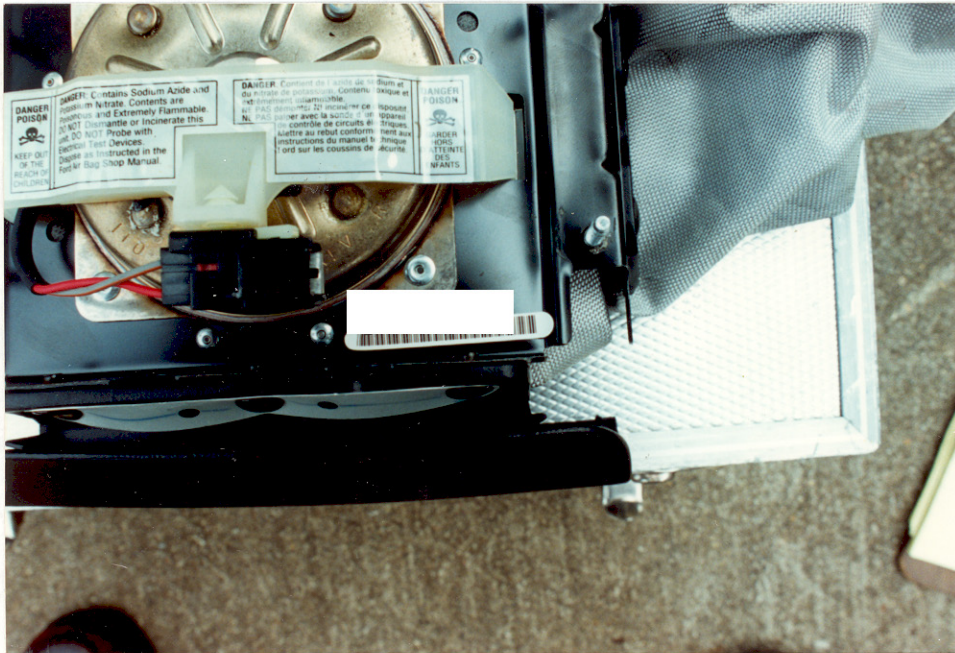


45. Back side of the TRW air bag inflator.



46. Close-up view of the bar-coded label at the top of the inflator assembly.





47. Bar-coded label at the lower left corner of the inflator assembly.



48. Horizontal tear across the chest area of the driver's shirt.





49. Close-up view of the tear pattern.



50. Tear across the left pocket.





51. Tear across the right pocket area.



52. Separated right shirt pocket.





53. Tear of the driver's T-shirt at the left chest area.



54. Air bag fabric transfers on the leather pocket calendar contained in the driver's shirt pocket.



55. Additional view of the fabric transfer on the pocket calendar.



**ATTACHMENT C**

**Police Accident Report**

BEST AVAILABLE COPY

100 DAY OF COLLISION  
YEAR 94 MONTH 03 DAY 01  
1456 03 01 1500  
61 TIME (HOUR 2400 HRS)  
62 NO OF VEHICLES  
63 MAINTAINED  
64 MAINTAINED  
65 MAINTAINED  
66 COUNTY  
67 CITY OR TOWNSHIP  
68 STREET NAME, ROAD NAME, ETC  
69 INTER WITH  
70 NON INTER  
71 PARKED VEH.  
72 PEDESTRIAN  
73 PEDALCYCLIST  
74 DRIVER'S LAST NAME  
75 FIRST NAME  
76 NUMBER AND STREET  
77 CITY  
78 STATE  
79 DRIVER'S LICENSE NUMBER  
80 SOCIAL SECURITY NO.  
81 SAME AS DL #  
82 INSURANCE CO.  
83 OR AGENT DRIVER STATEMENT  
84 PLACE OF EMPLOYMENT  
85 DRIVER'S LAST NAME  
86 FIRST NAME  
87 NUMBER AND STREET  
88 CITY  
89 STATE  
90 VEH. COLOR  
91 MAKE OF VEHICLE  
92 YEAR  
93 LICENSE PLATE NO.  
94 ST.  
95 YR.  
96 VEHICLE REMOVED TO  
97 VEHICLE REMOVED BY  
98 AUTH. 1. OWNER  
99 2. DRIVER  
100 3. POLICE  
101 EST. PROP. DAMAGE  
102 NONE LIGHT HEAVY  
103 ALCOHOL DATA  
104 DRIVER NO. 1  
105 TEST TYPE  
106 TEST RESULTS  
107 BREATH  
108 BLOOD  
109 URINE  
110 JUVENILE  
111 ACCIDENT DESCRIPTION  
112 VEHICLE REMOVED TO  
113 VEHICLE REMOVED BY  
114 AUTH. 1. OWNER  
115 2. DRIVER  
116 3. POLICE  
117 EST. PROP. DAMAGE  
118 NONE LIGHT HEAVY  
119 ALCOHOL DATA  
120 DRIVER NO. 2  
121 TEST TYPE  
122 TEST RESULTS  
123 BREATH  
124 BLOOD  
125 URINE  
126 JUVENILE  
127 DIAGRAM  
128 NAME  
129 ADDRESS  
130 CITY  
131 STATE  
132 ZIP  
133 INVESTIGATED AT SCENE  
134 YES  
135 NO  
136 PHOTOS TAKEN  
137 YES  
138 NO  
139 BY WHOM  
140 CHANGE  
141 NAME OF COURT  
142 OFFICER'S SIGNATURE  
143 NAME  
144 ADDRESS  
145 CITY  
146 STATE  
147 ZIP  
148 CITATION NO.  
149 CITATION NUMBER  
150 NAME OF COURT  
151 OFFICER'S SIGNATURE  
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294 NAME OF COURT  
295 OFFICER'S SIGNATURE  
296 NAME  
297 ADDRESS  
298 CITY  
299 STATE  
300 ZIP  
301 CITATION NO.  
302 CITATION NUMBER  
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1401 NAME OF COURT  
1402 OFFICER'S SIGNATURE  
1403 NAME  
1404 ADDRESS  
1405 CITY  
1406 STATE  
1407 ZIP  
1408 CITATION NO.  
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1455 NAME OF COURT  
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1501 OFFICER'S SIGNATURE  
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1636 OFFICER'S SIGNATURE  
1637 NAME  
1638 ADDRESS  
1639 CITY  
1640 STATE  
1641 ZIP  
1642 CITATION NO.  
1643 CITATION NUMBER  
1644 NAME OF COURT  
164

# MISSISSIPPI UNIFORM ACCIDENT REPORT

Mississippi

<b>ACCIDENT TYPE</b> Run off Road 1 Right 2 Left 3 Straight Non-Coll. In Road 4 Overturn 5 Fell from Vehicle 6 Other in Road		Coll. of MV in road with: 7 Pedestrian 8 Parked vehicle 9 Train 10 Bicycle 11 Animal 12 Fixed object 13 Other object		Coll. with OMY in Road 14 Rear end slow or stop 15 Rear end turn 16 Left turn same roadway 17 Left turn cross traffic 18 Right turn cross traffic 19 Head-on 20 Sideswipe 21 Angle 22 Other		<b>VISION OBSCUREMENT</b> 1 Rain snow fog on windshield 2 Windshield obscured - other 3 Vision blocked by lead on vehicle 4 Vision blocked by trees bushes 5 Vision blocked by building 6 Vision blocked by embankment 7 Vision blocked by signboards 8 Vision blocked by hillcrest 9 Vision blocked by parked veh 10 Vision blocked by moving veh 11 Driver blinded by headlights 12 Vision not obscured		<b>TRAFFIC CONTROL</b> 1 Stop sign 2 Stop and go signal 3 Yield sign 4 Flashing signal 5 Railroad flasher 6 Railroad gate and flasher 7 No passing zone 8 Channelization - painted 9 Channelization - physical 10 Other 11 No control present 12 Other		<b>TRAFFIC CONTROL FUNCTIONING</b> 1 Not Functioning 2 Functioning Properly 3 Functioning Improperly 4 Not Known		<b>LIGHT CONDITION</b> 1 Daylight 2 Dawn or dusk 3 Darkness, no street lights 4 Darkness, street lighted		<b>WEATHER CONDITION</b> 1 Clear 2 Rain 3 Snowing 4 Fog 5 Dust 6 High wind 7 Cloudy 8 Other		<b>ROAD CONDITION</b> 1 No defect 2 Defective shoulder 3 Holes, ruts, etc. 4 Foreign Material 5 Loose surface material 6 Obstruction not lighted 7 Holes, ruts, etc. 8 Road under construction 9 Road closed		<b>ROAD CHARACTER (LANE)</b> 1 One-way road or alley 2 Two-lane road 3 Three-lane road 4 Four-lane road 5 Divided road or one way street 6 Freeway 7 Unimproved road any size 8 Parking Lot		<b>ROAD CHARACTER (DESIGN)</b> 1 Bridge or underpass 2 Straight and level 3 Straight and grade 4 Straight and hill crest 5 Curve and level 6 Curve and grade 7 Curve and hillcrest 8 Intersection of two roadways 9 Non-intersection median crossover 10 Non-intersection private drive 11 End or beginning of divided highway 12 Other		<b>ROAD SURFACE CONDITION</b> 1 Dry 2 Wet 3 Snowy, icy 4 Other 5 Unknown		<b>ROAD SURFACE TYPE</b> 1 Concrete 2 Asphalt 3 Gravel 4 Dirt 5 Other		<b>ROAD DIVIDED BY</b> 1 Metal barrier 2 Concrete barrier 3 Concrete island 4 Grass median 5 None 6 Wooded barrier 7 Other		<b>CONTRIBUTING CIRCUMSTANCES</b> 1 No improper driving 2 Exceeded lawful speed 3 Speed too fast for conditions 4 Failed to yield right of way 5 Improper passing overtaking 6 Drove on wrong side of road 7 Passed stop sign 8 Following too closely 9 Made improper turn 10 Faulty equipment 11 Intoxication 12 Driving under influence 13 Roadway defects 14 Pedestrian actions 15 Animal on highway 16 Other		<b>TYPE EMERGENCY MEDICAL SERVICE</b> 1 None 2 Commercial or private unit 3 Municipal or volunteer unit 4 Hospital based unit 5 State or federal unit 6 Type unknown 7 Two or more types 8 Other 9 Unknown		<b>EXTRICATION</b> 1 Yes 2 No		<b>RE-EXAMINE DRIVER</b> 1 Veh 1 2 Veh 2 3 Both 4 No		<b>POLICE ENFORCEMENT ACTION</b> 1 DUI arrest 2 Cited for accident cause 3 Cited other cause 4 Arrested - other 5 No enforcement action		<b>INITIAL IMPACT</b> 10 UNDER CAR 11 OVERTURNED 12 TOTALLED 13 NONE OR UNKNOWN 14 OTHER	
<b>OBJECT STRUCK</b> 1 Utility Pole 2 Trees 3 Corner barrier median island 4 Curb, catch basin, culvert 5 Guard rail 6 Sign post 7 Signal standard 8 Abutment, embankment wall 9 Building, telephone booth 10 Bicycle 11 Animal 12 Other		<b>ROAD SYSTEM</b> 1 Interstate 2 State Highway 3 U.S. Highway 4 County Road 5 Municipal City 6 State Park 7 Other 8 Parking Lot, Private Property 9 Off Roadway		<b>PHYSICAL CONDITION OF DRIVER OR PEDESTRIAN</b> 1 Obviously intoxicated 2 Had been drinking - ability impaired 3 Same - ability not impaired 4 Sleepy, Fatigued 5 Other bodily defects-infirmities 6 Affected by exhaust fumes 7 Using drugs - ability impaired 8 Same-ability not impaired 9 No defects apparent 10 Unknown 11 Hit and Run 12 Pending-Lab results		<b>DRIVERS LICENSE</b> 1 Valid license 2 No license 3 Expired license 4 Suspended license 5 Suspended - DUI 6 Learner Permit 7 Improper DL 8 Other		<b>DRIVERS LICENSE RESTRICTIONS</b> 1 Corrective lens 2 Full hand equipment 3 Outside rearview mirror 4 Pre-Tx Comm - Pass 5 Automatic transmission 6 Mechanical signals 7 45 MPH 8 Re-examine before renewal 9 Grip on steering wheel 10 Motor driven cycle 11 Company owned vehicle 12 Other		<b>TYPE OF MOTOR VEHICLE</b> 1 Regular passenger car 2 Compact passenger car 3 Pickup 4 Station Wagon Van 5 Passenger Van and Trailer 6 Truck or truck tractor 7 Truck tractor and semi-trailer 8 Other truck combination 9 Farm tractor or farm equipment 10 Tractor 11 Motorcycle 12 Baltimore ATV 13 Recreation vehicle 14 School Bus 15 Bus 16 Emer Veh 17 Other		<b>VEHICLE CONDITION</b> 1 Defective brakes 2 No trailer brakes 3 Defective steering 4 Defective headlights 5 Defective taillights 6 Defective turn signal 7 Puncture or blowout 8 Fire and/or explosion 9 Slick or unsafe tire 10 Other defects 11 Defects not known 12 No defects apparent		<b>DIRECTION OF TRAVEL</b> 1 North 2 South 3 East 4 West 5 Northeast 6 Southwest 7 Northwest 8 Southeast		<b>DIRECTION OF TRAVEL TWO OR MORE VEHICLES</b> Both Vehicles Entered Intersection 1 At angle 2 From same direction 3 From opposite direction Non Intersection, Both Vehicles Going: 4 In opposite direction 5 In same direction 6 At angle		<b>VEHICLE ACTION</b> 1 Going straight ahead 2 Making right turn 3 Making left turn 4 Making U turn 5 Stopping/stopping in trafficway 6 Entering/parking position 7 Parked 8 Leaving parked position 9 Backing 10 Overtaking, passing 11 Avoiding vehicle, object, pedestrian 12 In tow 13 Stopped in lane for traffic 14 Unknown		<b>PEDESTRIAN ACTION</b> 1 Crossing road at intersection 2 Crossing road - non-intersection 3 Walking in road with traffic 4 Walking in road against traffic 5 Standing in road 6 Getting on or off vehicle 7 Working on or pushing vehicle 8 Working on or in road 9 Playing in road 10 In road - other reason 11 Not in road 12 Hitchhiking		<b>PEDESTRIAN CLOTHING</b> 1 Light 2 Dark		<b>WHICH VEHICLE OCCUPIED</b> 1 Veh 1 2 Veh 2 3 Pedestrian 4 Other		<b>POSITION IN VEHICLE</b> 1 Driver 2 In 7 Passengers 3 Riding Hanging On Outside		<b>SAFETY EQUIPMENT USED</b> 1 No restraint used 2 Lap Belt 3 Harness 4 Lap Belt & Harness 5 Child Restraint 6 Harness 7 Air Bag 8 Other		<b>EJECTION FROM VEHICLE</b> 1 Not Ejected 2 Partial Ejection 3 Ejected 4 Killed 5 Moderate injury 6 Compensate of Pain 7 No injury		<b>VICTIM'S PHYSICAL CONDITION</b> A Incapacitated B Moderate injury C Compensate of Pain D No injury		<b>INJURED TAKEN TO</b> 1 Hospital 2 Home 3 Other		<b>OCCUPANTS</b> 1 Driver 2 Passenger 3 Other			

**ATTACHMENT D**

**CRASHPC Output**



# SUMMARY OF CRASHPC RESULTS USING DAMAGE

## CRASH3 RECONSTRUCTION

### SPEED CHANGE (DAMAGE)

#### VEHICLE #1

TOTAL 19 KPH ( 12 MPH)  
 LONGITUDINAL -19 KPH ( -12 MPH)  
 LATITUDINAL 0 KPH ( 0 MPH)  
 PDOF ANGLE 0 DEGREES  
 ENERGY DISSIPATED = 26414 JOULES ( 19480 FT-LB)

#### VEHICLE #2

TOTAL 30 KPH ( 18 MPH)  
 LONGITUDINAL 30 KPH ( 18 MPH)  
 LATITUDINAL 0 KPH ( 0 MPH)  
 PDOF ANGLE -180 DEGREES  
 ENERGY DISSIPATED = 49169 JOULES ( 36260 FT-LB)

### DAMAGE DATA

#### VEHICLE #1

SIZE CATEGORY 6  
 STIFFNESS CATEGORY 8  
 VEHICLE WEIGHT 2039 KGS ( 4496 LBS)  
 CDC 12FDEW1  
 PDOF ANGLE 0 DEGREES  
 CRUSH LENGTH 182 CM. ( 72 IN.)  
 C1 4 CM. ( 2 IN.)  
 C2 3 CM. ( 1 IN.)  
 C3 6 CM. ( 3 IN.)  
 C4 6 CM. ( 3 IN.)  
 C5 4 CM. ( 2 IN.)  
 C6 3 CM. ( 1 IN.)  
 D 0 CM. ( 0 IN.)  
 D' 0 CM. ( 0 IN.)

#### VEHICLE #2

3  
 3  
 1338 KGS ( 2950 LBS)  
 06BDEW2  
 180 DEGREES  
 142 CM. ( 56 IN.)  
 15 CM. ( 6 IN.)  
 20 CM. ( 8 IN.)  
 25 CM. ( 10 IN.)  
 30 CM. ( 12 IN.)  
 25 CM. ( 10 IN.)  
 20 CM. ( 8 IN.)  
 0 CM. ( 0 IN.)  
 4 CM. ( 1 IN.)

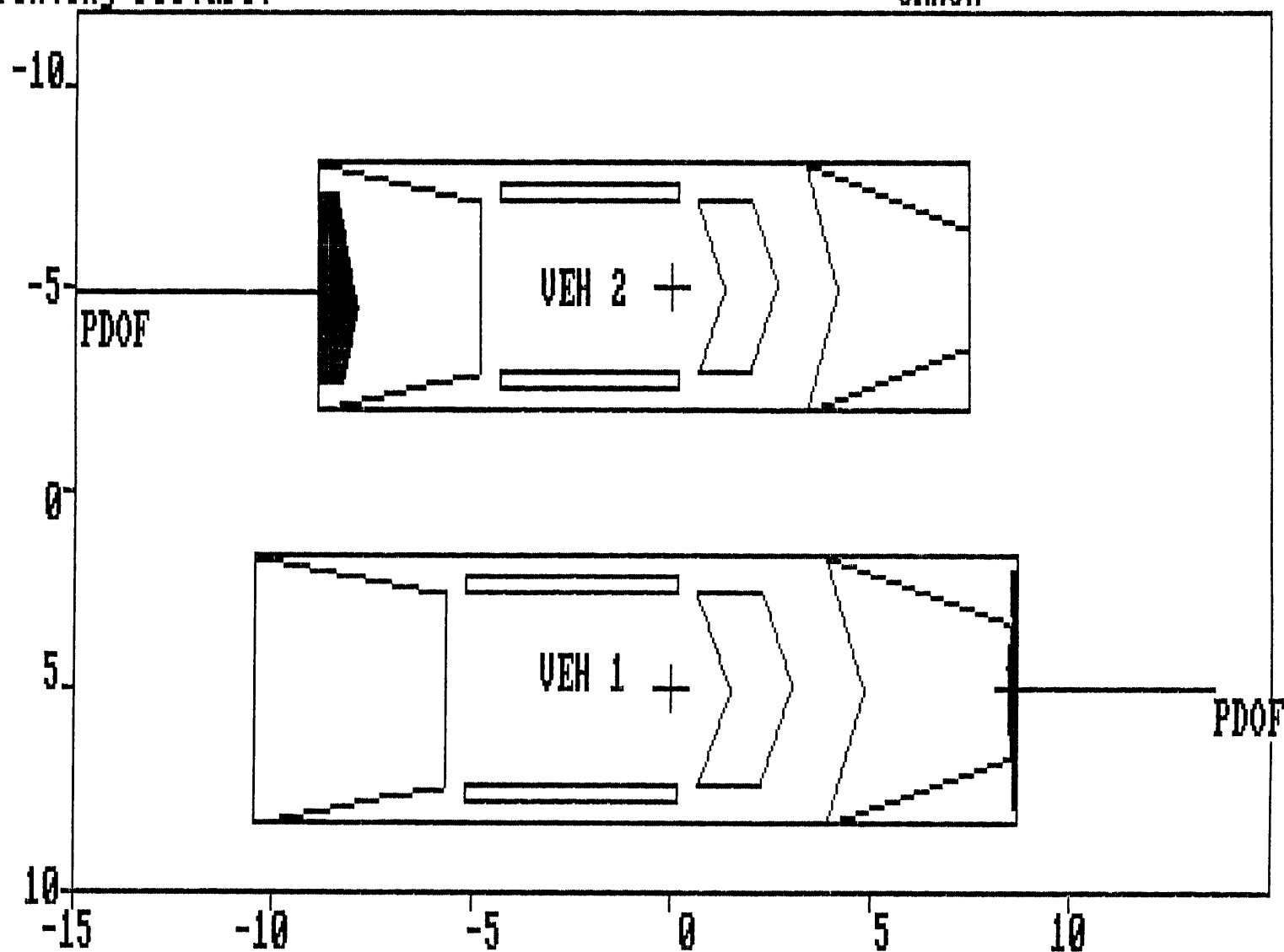
(\* INDICATES DEFAULT VALUE)

# DIMENSIONS AND INERTIAL PROPERTIES

	VEHICLE #1	VEHICLE #2
CG TO FRONT AXLE	153 CM. ( 60 IN.)	130 CM. ( 51 IN.)
CG TO REAR AXLE	165 CM. ( 65 IN.)	141 CM. ( 56 IN.)
TRACK	162 CM. ( 64 IN.)	150 CM. ( 59 IN.)
CG TO FRONT OF VEH	265 CM. ( 104 IN.)	228 CM. ( 90 IN.)
CG TO REAR OF VEH	-318 CM. (-125 IN.)	-270 CM. (-106 IN.)
CG TO SIDE OF VEH	101 CM. ( 40 IN.)	92 CM. ( 36 IN.)
MOMENT OF INERTIA	22425 KGS ( 49437 LBS)	11565 KGS ( 25496 LBS)
VEHICLE MASS	5 KGS ( 12 LBS)	3 KGS ( 8 LBS)

Printing Picture:

CRASH



DAMAGE DESCRIPTION

**ATTACHMENT E**

**Air Bag Supplement**

## ACCIDENT SUMMARY

ACCIDENT DATE                      / 95

POLICE INVESTIGATED (1,2,9)\*

                     POLICE DEPT.City                      County                     

## GENERAL LOCALITY

- (1) Freeway, Limited Access  
(2) Urban (City)  
(3) Urban-Rural (mixed)  
(4) Rural, Fields

## CONFIGURATION (First Harm)

- (0) Struck Object or Pedestrian  
(1) Rear-End  
(2) Head-On  
(3) Rear-to-Rear  
(4) Angle  
(5) Sideswipe-Same Direction  
(6) Sideswipe-Opposite Direct.  
(7) NonColl:eg Fell from Veh  
(8) Nonimpact Deployment  
(9) Unknown

## FIRE INVOLVED (0) None

- (1) AirBag Vehicle  
(2) Other Vehicle  
(3) Both Vehicles  
(9) Unknown

## NUMBER: VEHICLES INVOLVED

(8)=8 or more

## PERSONS INVOLVED

## INJURED PERSONS

## MAXIMUM AIS IN ACCIDENT

## OTHER VEHICLE: MAXIMUM AIS

PRIME/DEPLOY IMPACT w AB VEH:  
EVENT NUMBERCDC 06-BDEW-1

## TOTAL DELTA-V

19 km/h

Model Year, Make, Model, Body Type:

## AIRBAG VEHICLE INSPECTION

DATE VEH. INSPECTED                      / 95

## REASON VEHICLE NOT INSPECTED

- (0) Not Required  
(1) Inspection Completed  
(2) Cannot be Located\*\*  
(3) Repaired or Destroyed\*\*  
(5) Refual or Impounded\*\*  
(7) Other\*

\*\*Specify:                     

## IMPACT DATA OBTAINED

- (0) No Data Obtained  
(1) CDC Only  
(2) Crush Profile Only  
(3) Trajectory Data Only  
(4) CDC and Crush Profile  
(5) CDC and Trajectory  
(6) Crush and Trajectory  
(7) CDC, Crush & Trajectory

## BASIS OF DELTA-V

- (0) Not Computed (Unknown Why)  
(1) CRASH - Damage Only  
(2) CRASH - Damage+Trajectory  
(3) Missing Vehicle Algorithm  
(4) Yielding Object Algorithm  
(5) Unknown Basis  
(6) One Vehicle Beyond Scope  
(7) Collision Beyond Scope  
(8) Insufficient Data

## VEHICLE HISTORY

HAS AIRBAG VEHICLE BEEN IN  
ANY PRIOR IMPACTS (1,2,9)\*HAS ANY PRIOR MAINTENANCE/SERVICE  
BEEN PERFORMED ON SYSTEM(1,2,9)\*\*Describe:                     AIRBAG VEHICLE: FLEET FORD PICKUP TRUCKVIN 1E1E1SMILEAGE 19791 km

\* (1)=Yes, (2)=No, (9)=Unknown

DRAFT                     /85



SYSTEM READINESS LAMP (In Instrument Cluster)		AIRBAG VEHICLE FIRST HARMFUL EVENT	<u>13</u>
<p>PRE-IMPACT LAMP CONDITION</p> <p>(1) Functioning/ProvedOut (2) Inoperative (9) Unknown</p>	<u>1</u>	<p>(01) Fire or explosion (02) Immersion (03) Gas Inhalation (04) Fell from vehicle (05) Injured in vehicle (06) Other noncollision (specify): (07) Overturn (08) Jackknife with intraunit damage Collision With: (09) Pedestrian (10) Pedalcyclist (11) Railway train (12) Animal (13) Motor vehicle in transport (same roadway) (14) Motor vehicle in transport (other roadway) (15) Parked motor vehicle (16) Other type nonmotorist (specify): (17) Thrown or falling object (18) Boulder Collision with Fixed Object: (20) Building (21) Impact attenuator/Crash Cushion (22) Bridge pier or abutment (23) Bridge parapet end (24) Bridge rail (25) Guardrail (26) Concrete traffic barrier (27) Median barrier (28) Other longitudinal barrier (specify): (29) Highway/Traffic sign post (30) Overhead sign support (31) Luminaire/Light support (32) Utility pole (33) Other post, pole, or support (specify): (34) Culvert (35) Curb (36) Ditch (37) Embankment-earth (38) Embankment-rock, stone or concrete (39) Fence (wooden, wire, chain link, etc.) (40) Wall (stone, rock, metal, etc.) (41) Fire hydrant (42) Shrubbery (43) Tree (44) Other fixed object (specify): (45) Pavement surface irregularity (pothole, grooved, grates) (99) Unknown</p>	
<p>DRIVER'S REPORT OF PRE-IMPACT FLASHING</p> <p>(00) No Flashing Reported (01) Continuous Flashing (02) -- &gt;Number of Flashes (11) (12) Constant Light (19) Flashing, Unkn Number (88) Not App (system removed) (99) Unknown</p>	<u>99</u>		
<p>PERIOD OF PRE-IMPACT FLASHING</p> <p>(0) No Flashing (1) Same Day as Impact (2) Prior Day (3) Prior Two Days (4) Prior Week (5) Prior Month (6) Over One Month (9) Unknown</p>	<u>9</u>		
<p>POST-IMPACT LAMP CONDITION</p> <p>(1) Functioning/ProvedOut (2) Inoperative (9) Unknown</p>	<u>1</u>		
<p>POST-IMPACT FLASHING</p> <p>(00) No Flashing (01) Continuous Flashing (02) -- &gt;Number of Flashes (11) (12) Constant Light (19) Flashing, Unkn Number (88) Not Appl (removed) (99) Unknown</p> <p><i>3/2/3/2... FLASH SEQUENCE</i></p>	<u>01</u>		



## AIRBAG SYSTEM DAMAGE

CODES: (1) Yes, Damaged\*  
 (2) No, Intact  
 (8) Not App. (Removed)  
 (9) Unknown

## AIRBAG MODULE

1

SENSORS: Left Front

2

Center Front

8

Right Front

2

Rear, Cowl

8

DIAGNOSTIC MODULE

2

WIRING

2

KNEE DIVERter

1

INDICATION OF DISCONNECTED  
 OR LOOSE ELECTRICAL  
 CONNECTORS

2

## CONDITION OF DEPLOYED BAG

1

(1) Bag Intact  
 (2) Split or Torn\*  
 (3) Cut by Object In Impact\*  
 (4) Cut after Accident\*  
 (5) Other (e.g., burned)\*  
 (8) N/A (not deployed)  
 (9) Unknown

## \*DESCRIBE System and Bag Damage:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

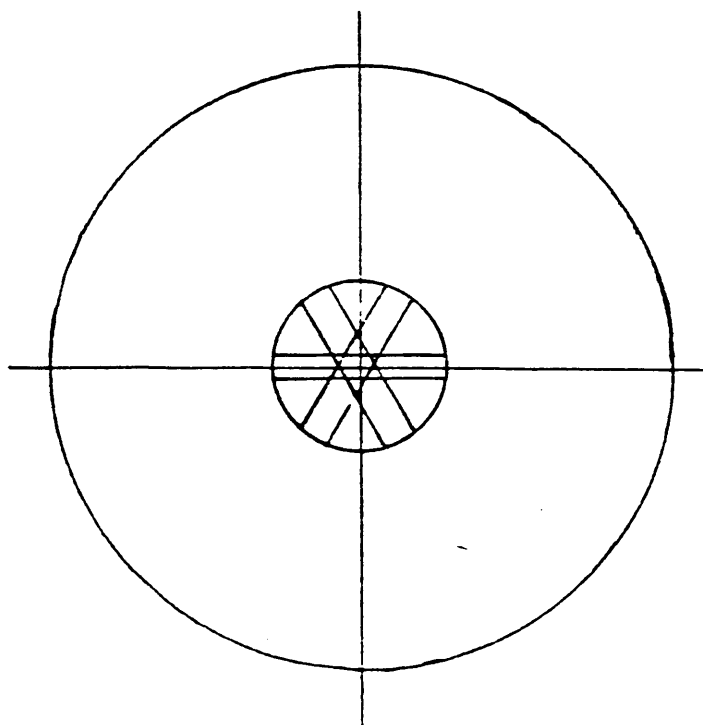
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\_\_\_\_\_

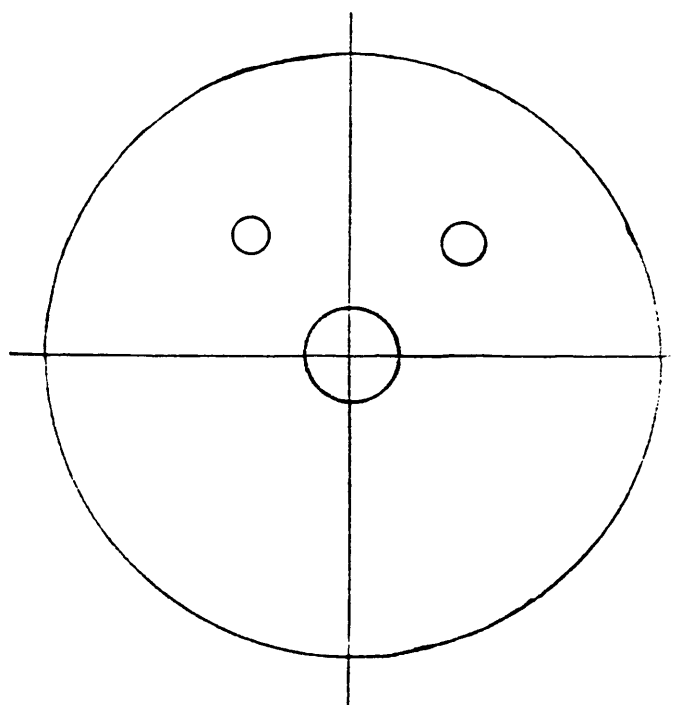
NOTE DAMAGE AND CONTACT MARKS ON AIRBAG DIAGRAMS BELOW:

REFER TO NACS  
 IV FORM



FRONT

TOP



BOTTOM

BACK



<b>OCCUPANTS of AIRBAG CAR</b>		<b>NOTES:</b>
NUMBER OF OCCUPANTS IN VEHICLE (8) 8 or more	<u>1</u>	
NUMBER OF INJURED PERSONS	<u>1</u>	
MAXIMUM AIS IN AIRBAG VEHICLE (0) No Injury (1-6) AIS Severity (7) Injured, Unknown Severity (9) Unknown	<u>5</u>	
<hr/>		
DRIVER AGE <u>56</u> SEX <u>MALE</u>		
NUMBER OF DRIVER INJURIES	<u>31</u>	
SOURCE OF BEST INJURY DATA	<u>1</u>	
<hr/>		
<div>(0) Not Injured (1) Autopsy w/wo med. records (2) Hospital Medical Records (3) Emergency Room only (4) Private physician, Clinic (5) Lay Coroner Report (6) EMS Personnel (7) Interviewee (8) Police (9) Unknown</div>		
<hr/>		
<b>MAXIMUM AIS BY BODY REGION</b>		
<b>REGION</b>	<b>MAX AIS</b>	<b>CONTACT</b>
Head/Neck/Face	<u>1</u>	<u>170</u>
Chest	<u>5</u>	<u>170</u> <u>175</u>
Abdomen	<u>2</u>	<u>170</u> <u>175</u>
Leg/Hips	<u>1</u>	<u>004</u>
Other (Arms)	<u>1</u>	<u>170</u> <u>170</u>
DRIVER MAXIMUM	<u>5</u>	<u>175</u>
<hr/>		
EJECTION: Extent <u>NONE</u>		
Portal <u>NA</u>		

**DRIVER BELT USAGE:** (1) Used (2) Not Used (9) Unknown 2

Evidence: \_\_\_\_\_  
\_\_\_\_\_

**DRIVER POSTURE:** Any Comments Recorded (1) Yes, (2) No 1

Describe driver's posture and position on seat including specific comments on head, torso, buttocks, legs and feet. Also note hand and arm position. Did driver brace before crash? Describe:

REFER TO DRIVER KINEMATICS

**DRIVER FOREIGN OBJECTS:** Comments Recorded (1) Yes, (2) No 1

Was driver wearing contact lenses or eyeglasses? Or holding any foreign object at the time of the impact (packages on lap, pipe, food, bottle, cigarette, etc.)? Did any lenses, objects, or jewelry play any role?:

EYEGLASSES, DISPLACED FROM FACE, NOT DAMAGED

**DRIVER COMMENTS:** Comments Recorded (1) Yes, (2) No 1

Was the driver aware that the vehicle was equipped with a supplemental restraint system? Did driver offer any comments on smoke, noise, etc.? Did the driver comment on the airbag as a restraint system? Describe:

FATAL

**PASSENGER-AIRBAG CONTACT** (1) Yes, (2) No, (9) Unknown 2

Describe: NO PASSENGER

**ATTACHMENT F**

**NASS Vehicle Forms**





## GENERAL VEHICLE FORM

1. ~~Primary Sampling Unit Number~~ \_\_\_\_\_  
2. Case Number - Stratum 9502  
3. Vehicle Number 01

## VEHICLE IDENTIFICATION

4. Vehicle Model Year 94  
Code the last two digits of the model year  
(99) Unknown
5. Vehicle Make (specify): 12  
FORD  
Applicable codes are found in your  
NASS Data Collection, Coding and  
Editing Manual.  
(99) Unknown
6. Vehicle Model (specify): 481  
F150 EXTENDED CAB PICKUP  
Applicable codes are found in your  
NASS Data Collection, Coding and  
Editing Manual.  
(999) Unknown
7. Body Type 31  
Note: Applicable codes may be found on  
the back of this page.
8. Vehicle Identification Number  
1FTEX15N2RK6  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17  
Left justify; Slash zeros and letter Z (0 and-Z)  
No VIN—Code all zeros Unknown—Code all nines
9. Vehicle Special Use (This Trip) 0  
(0) No special use  
(1) Taxi  
(2) Vehicle used as school bus  
(3) Vehicle used as other bus  
(4) Military  
(5) Police  
(6) Ambulance  
(7) Fire truck or car  
(8) Other (specify): \_\_\_\_\_  
(9) Unknown

## OFFICIAL RECORDS

10. Police Reported Vehicle Disposition 1  
(0) Not towed due to vehicle damage  
(1) Towed due to vehicle damage  
(9) Unknown
11. Police Reported Travel Speed 999  
Code to the nearest kmph (NOTE: 000 means  
less than 0.5 kmph)  
(160) 159.5 kmph and above  
(999) Unknown  
  
\_\_\_\_ mph X 1.6093 = \_\_\_\_ kmph

12. Speed Limit 064  
(000) No statutory limit  
Code posted or statutory speed limit  
in kmph  
(999) Unknown  
  
40 mph X 1.6093 = 064 kmph
13. Police Reported Alcohol Presence For Driver 0  
(0) No alcohol present  
(1) Yes alcohol present  
(7) Not reported  
(8) No driver present  
(9) Unknown
14. Alcohol Test Result For Driver 96  
Code actual value (decimal implied  
before first digit—0.xx)  
(95) Test refused  
(96) None given  
(97) AC test performed, results unknown  
(98) No driver present  
(99) Unknown  
  
Source: \_\_\_\_\_
15. Police Reported Other Drug Presence For Driver 0  
(0) No other drug(s) present  
(1) Yes other drug(s) present  
(7) Not reported  
(8) No driver present  
(9) Unknown
16. Other Drug Specimen Test Result For Driver 0  
(0) No specimen test given  
(1) Drug(s) not found in specimen  
(2) Drug(s) found in specimen, (specify):  
  
(3) Specimen test given, results unknown or not  
obtained  
(8) No driver present  
(9) Unknown if specimen test given
17. Driver's Zip Code [REDACTED]  
(00001) Driver not a resident of U.S. or territories  
Code actual 5-digit zip code  
(99998) No driver present  
(99999) Unknown
18. Driver's Race/Ethnic Origin 1  
(1) White (non-Hispanic)  
(2) Black (non-Hispanic)  
(3) White (Hispanic)  
(4) Black (Hispanic)  
(5) American Indian, Eskimo or Aleut  
(6) Asian or Pacific Islander  
(7) Other (specify):  
  
(8) No driver present  
(9) Unknown

# CODES FOR BODY TYPE

## CDS APPLICABLE VEHICLES

### Automobiles

- (01) Convertible (excludes sun-roof, t-bar)
  - (02) 2-door sedan, hardtop, coupe
  - (03) 3-door/2-door hatchback
  - (04) 4-door sedan, hardtop
  - (05) 5-door/4-door hatchback
  - (06) Station wagon (excluding van and truck based)
  - (07) Hatchback, number of doors unknown
  - (08) Other automobile type (specify):
- 
- (09) Unknown automobile type

### Automobile Derivatives

- (10) Auto based pickup (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup)
- (11) Auto based panel (cargo station wagon, auto based ambulance/hearse)
- (12) Large limousine - more than four side doors or stretched chassis
- (13) Three-wheel automobile or automobile derivative

### Utility Vehicles ( $\leq 4,500$ kgs GVWR)

- (14) Compact utility (Jeep CJ-2 - CJ-7, Scrambler, Golden Eagle, Renegade, Laredo, Wrangler, Cherokee [84 and after], Dispatcher, Raider, Bronco II, Bronco [76 and before], Explorer, S-10 Blazer, Geo Tracker, Bravada, S-15 Jimmy, Thing, Pathfinder, Trooper, Trooper II, Rodeo, Amigo, Navajo, 4-Runner, Montero, Passport, Samurai, Sidekick, Rocky)
- (15) Large utility (includes Jeep Cherokee [83 and before], Ramcharger, Trailduster, Bronco-fullsize [78 and after], fullsize Blazer, fullsize Jimmy, Hummer, Landcruiser, Rover, Scout, Yukon)
- (16) Utility station wagon (Chevy Suburban, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine)
- (19) Utility, unknown body type

### Van Based Light Trucks ( $\leq 4,500$ kgs GVWR)

- (20) Minivan (Town and Country, Caravan, Grand Caravan, Voyager, Grand Voyager, Mini-Ram, Vista, Aerostar, Windstar, Villager, Lumina APV, Trans Sport, Silhouette, Astro, Safari, Toyota Van, Toyota Minivan, Previa, Nissan Minivan, Quest, Mitsubishi Minivan, Expo Wagon, Vanagon/Camper.)
  - (21) Large van (B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vandura.)
  - (22) Step van or walk-in van ( $\leq 4,500$  kgs GVWR)
  - (23) Van based motorhome ( $\leq 4,500$  kgs GVWR)
  - (24) Van based school bus ( $\leq 4,500$  kgs GVWR)
  - (25) Van based other bus ( $\leq 4,500$  kgs GVWR)
  - (28) Other van type (Hi-Cube Van, Kary) (specify):
- 
- (29) Unknown van type

### Light Conventional Trucks (Pickup style cab, $\leq 4,500$ kgs GVWR)

- (30) Compact pickup (D50, Colt P/U, Ram 50, Dakota, Arrow Pickup [foreign], Ranger, Courier, S-10, T-10, LUV, S-15, T-15, Sonoma, Datsun/Nissan Pickup, P'up, Mazda Pickup, Toyota Pickup, Mitsubishi Pickup)
- (31) Large Pickup (Jeep Pickup, Comanche, Ram Pickup, D100-D350, W100-W350, F100-F350, C10-C35, K10-K35, R10-R35, V10-V35, Silverado, Sierra, R100-R500, T100)

- (32) Pickup with slide-in camper
- (33) Convertible pickup
- (39) Unknown pickup style light conventional truck type

### Other Light Trucks ( $\leq 4,500$ kgs GVWR)

- (40) Cab chassis based (includes rescue vehicles, light stake, dump, and tow truck)
- (41) Truck based panel
- (42) Light truck based motorhome (chassis mounted)
- (45) Other light conventional truck type
- (48) Unknown light truck type
- (49) Unknown light vehicle type (automobile, utility, van, or light truck)

## OTHER VEHICLES

### Buses (Excludes Van Based)

- (50) School bus (designed to carry students, not cross country or transit)
  - (58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify):
- 
- (59) Unknown bus type

### Medium/Heavy Trucks ( $> 4,500$ kgs GVWR)

- (60) Step van ( $> 4,500$  kgs GVWR)
- (61) Single unit straight truck ( $4,500$  kgs  $<$  GVWR  $\leq 8,850$  kgs)
- (62) Single unit straight truck ( $8,850$  kgs  $<$  GVWR  $\leq 12,000$  kgs)
- (63) Single unit straight truck ( $> 12,000$  kgs GVWR)
- (64) Single unit straight truck, GVWR unknown
- (65) Medium/heavy truck based motorhome
- (67) Truck-tractor with no cargo trailer
- (68) Truck-tractor pulling one trailer
- (69) Truck-tractor pulling two or more trailers
- (70) Truck-tractor (unknown if pulling trailer)
- (78) Unknown medium/heavy truck type
- (79) Unknown truck type (light/medium/heavy)

### Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

- (80) Motorcycle
  - (81) Moped (motorized bicycle)
  - (82) Three-wheel motorcycle or moped
  - (88) Other motored cycle (minibike, motorscooter) (specify):
- 
- (89) Unknown motored cycle type

### Other Vehicles

- (90) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
- (91) Snowmobile
- (92) Farm equipment other than trucks
- (93) Construction equipment other than trucks
- (97) Other vehicle type
- (99) Unknown body type

## PRECRASH ENVIRONMENTAL DATA

<p>19. Relation To Interchange Or Junction <u>0</u></p> <p>(0) Non-interchange area and non-junction</p> <p>(1) Interchange area related</p> <p><i>Non-Interchange junctions</i></p> <p>(2) Intersection related</p> <p>(3) Driveway, alley access related</p> <p>(4) Other junction (specify) _____</p> <p>(5) Unknown type of junction _____</p> <p>(9) Unknown</p>	<p>25. Roadway Surface Condition <u>1</u></p> <p>(1) Dry</p> <p>(2) Wet</p> <p>(3) Snow or slush</p> <p>(4) Ice</p> <p>(5) Sand, dirt, or oil</p> <p>(8) Other (specify): _____</p> <p>(9) Unknown</p>
<p>20. Trafficway Flow <u>1</u></p> <p>(0) Not physically divided (two way traffic)</p> <p>(1) Divided trafficway-median strip without positive barrier</p> <p>(2) Divided trafficway-median strip with positive barrier</p> <p>(3) One way traffic</p> <p>(9) Unknown</p>	<p>26. Light Conditions <u>1</u></p> <p>(1) Daylight</p> <p>(2) Dark</p> <p>(3) Dark, but lighted</p> <p>(4) Dawn</p> <p>(5) Dusk</p> <p>(9) Unknown</p>
<p>21. Number Of Travel Lanes <u>2</u></p> <p>(1) One</p> <p>(2) Two</p> <p>(3) Three</p> <p>(4) Four</p> <p>(5) Five</p> <p>(6) Six</p> <p>(7) Seven or more</p> <p>(9) Unknown</p>	<p>27. Atmospheric Conditions <u>0</u></p> <p>(0) No adverse atmospheric-related driving conditions</p> <p>(1) Rain</p> <p>(2) Sleet/hail</p> <p>(3) Snow</p> <p>(4) Fog</p> <p>(5) Rain and fog</p> <p>(6) Sleet and fog</p> <p>(7) Other (e.g., smog, smoke, blowing sand or dust, etc.) (specify): _____</p> <p>(9) Unknown</p>
<p>22. Roadway Alignment <u>1</u></p> <p>(1) Straight</p> <p>(2) Curve right</p> <p>(3) Curve left</p> <p>(9) Unknown</p>	<p>28. Traffic Control Device <u>0</u></p> <p>(0) No traffic control(s)</p> <p>(1) Traffic control signal (not RR crossing)</p> <p><i>Regulatory</i></p> <p>(2) Stop sign</p> <p>(3) Yield sign</p> <p>(4) School zone sign</p> <p>(5) Other regulatory sign (specify): _____</p>
<p>23. Roadway Profile <u>1</u></p> <p>(1) Level</p> <p>(2) Uphill grade (&gt; 2%)</p> <p>(3) Hill crest</p> <p>(4) Downhill grade (&gt; 2%)</p> <p>(5) Sag</p> <p>(9) Unknown</p>	<p>(6) Warning sign (not RR crossing)</p> <p>(7) Unknown sign</p> <p>(8) Miscellaneous/other controls including RR controls (specify): _____</p> <p>(9) Unknown</p>
<p>24. Roadway Surface Type <u>2</u></p> <p>(1) Concrete</p> <p>(2) Bituminous (asphalt)</p> <p>(3) Brick or block</p> <p>(4) Slag, gravel, or stone</p> <p>(5) Dirt</p> <p>(8) Other (specify): _____</p> <p>(9) Unknown</p>	<p>29. Traffic Control Device Functioning <u>0</u></p> <p>(0) No traffic control device</p> <p>(1) Traffic control device not functioning (specify): _____</p> <p>(2) Traffic control device functioning properly</p> <p>(9) Unknown</p>



**PRECRASH DRIVER RELATED DATA**

30. Driver's Distraction/Inattention To Driving 99  
 (Prior To Recognition Of Critical Event)  
 (00) No driver present  
 (01) Attentive or not distracted  
 (02) Looked but did not see

*Distractions*

- (03) By other occupant(s), (specify): \_\_\_\_\_  
 (04) By moving object in vehicle (specify): \_\_\_\_\_  
 (05) While talking or listening to cellular phone  
 (specify location and type of phone): \_\_\_\_\_  
 (06) While dialing cellular phone (specify location  
 and type of phone): \_\_\_\_\_  
 (07) While adjusting climate controls  
 (08) While adjusting radio, cassette, CD (specify): \_\_\_\_\_  
 (09) While using other device/object in vehicle  
 (specify): \_\_\_\_\_  
 (10) Sleepy or fell asleep  
 (11) Distracted by outside person, object, or event  
 (specify): \_\_\_\_\_  
 (12) Eating or drinking  
 (13) Smoking related  
 (97) Distracted/inattentive, details unknown  
 (98) Other, distraction (specify): \_\_\_\_\_  
 (99) Unknown

31. Pre-Event Movement (Prior to  
 Recognition of Critical Event) 01  
 (00) No driver present  
 (01) Going straight  
 (02) Decelerating in traffic lane  
 (03) Accelerating in traffic lane  
 (04) Starting in traffic lane  
 (05) Stopped in traffic lane  
 (06) Passing or overtaking another vehicle  
 (07) Disabled or parked in travel lane  
 (08) Leaving a parking position  
 (09) Entering a parking position  
 (10) Turning right  
 (11) Turning left  
 (12) Making a U-turn  
 (13) Backing up (other than for parking position)  
 (14) Negotiating a curve  
 (15) Changing lanes  
 (16) Merging  
 (17) Successful avoidance maneuver to a previous  
 critical event  
 (97) Other (specify): \_\_\_\_\_  
 (99) Unknown

32. Critical Precrash Event 50  
*This Vehicle Loss of Control Due To:*  
 (01) Blow out or flat tire  
 (02) Stalled engine  
 (03) Disabling vehicle failure (e.g., wheel fell off)  
 (specify): \_\_\_\_\_  
 (04) Non-disabling vehicle problem (e.g., hood flew  
 up) (specify): \_\_\_\_\_  
 (05) Poor road conditions (puddle, pot hole, ice, etc.)  
 (specify): \_\_\_\_\_  
 (06) Traveling too fast for conditions  
 (08) Other cause of control loss (specify): \_\_\_\_\_  
 (09) Unknown cause of control loss

*This Vehicle Traveling*

- (10) Over the lane line on left side of travel lane  
 (11) Over the lane line on right side of travel lane  
 (12) Off the edge of the road on the left side  
 (13) Off the edge of the road on the right side  
 (14) End departure  
 (15) Turning left at intersection  
 (16) Turning right at intersection  
 (17) Crossing over (passing through) intersection  
 (18) This vehicle decelerating  
 (19) Unknown travel direction

*Other Motor Vehicle In Lane*

- (50) Other vehicle stopped  
 (51) Traveling in same direction with lower steady  
 speed  
 (52) Traveling in same direction while decelerating  
 (53) Traveling in same direction with higher speed  
 (54) Traveling in opposite direction  
 (55) In crossover  
 (56) Backing  
 (59) Unknown travel direction of other motor  
 vehicle in lane

*Other Motor Vehicle Encroaching Into Lane*

- (60) From adjacent lane (same direction)—over left  
 lane line  
 (61) From adjacent lane (same direction)—over right  
 lane line  
 (62) From opposite direction—over left lane line  
 (63) From opposite direction—over right lane line  
 (64) From parking lane  
 (65) From crossing street, turning into same  
 direction  
 (66) From crossing street, across path  
 (67) From crossing street, turning into opposite  
 direction  
 (68) From crossing street, intended path not known  
 (70) From driveway, turning into same direction  
 (71) From driveway, across path  
 (72) From driveway, turning into opposite direction  
 (73) From driveway, intended path not known  
 (74) From entrance to limited access highway  
 (78) Encroachment by other vehicle—details  
 unknown

*Pedestrian, Pedalcyclist, or Other Nonmotorist*

- (80) Pedestrian in roadway  
 (81) Pedestrian approaching roadway  
 (82) Pedestrian—unknown location  
 (83) Pedalcyclist or other nonmotorist in roadway  
 (specify): \_\_\_\_\_  
 (84) Pedalcyclist or other nonmotorist approaching  
 roadway, (specify): \_\_\_\_\_  
 (85) Pedalcyclist or other nonmotorist—unknown  
 location (specify): \_\_\_\_\_

*Object or Animal*

- (87) Animal in roadway  
 (88) Animal approaching roadway  
 (89) Animal—unknown location  
 (90) Object in roadway  
 (91) Object approaching roadway  
 (92) Object—unknown location  
 (98) Other critical precrash event (specify): \_\_\_\_\_  
 (99) Unknown

## 33. Attempted Avoidance Maneuver

02

- (00) No driver present
- (01) No avoidance maneuver
- (02) Braking (no lockup)
- (03) Braking (lockup)
- (04) Braking (lockup unknown)
- (05) Releasing brakes
- (06) Steering left
- (07) Steering right
- (08) Braking and steering left
- (09) Braking and steering right
- (10) Accelerating
- (11) Accelerating and steering left
- (12) Accelerating and steering right
- (98) Other action (specify):

(99) Unknown

## 34. Pre-Impact Stability

1

- (0) No driver present
- (1) Tracking
- (2) Skidding longitudinally—rotation less than 30 degrees
- (3) Skidding laterally—clockwise rotation
- (4) Skidding laterally—counterclockwise rotation
- (7) Other vehicle loss-of-control (specify):

(9) Precrash stability unknown

## 35. Pre-Impact Location

1

- (0) No driver present
- (1) Stayed in original travel lane
- (2) Stayed on roadway but left original travel lane
- (3) Stayed on roadway, not known if left original travel lane
- (4) Departed roadway
- (5) Remained off roadway
- (6) Returned to roadway
- (7) Entered roadway
- (9) Unknown

## 36. Accident Type

20

(Note: Applicable codes on back of this page)

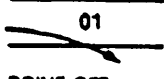
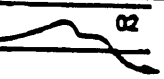





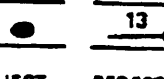
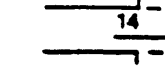
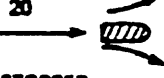
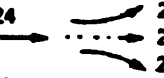
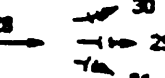
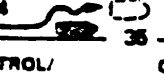
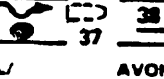
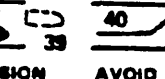
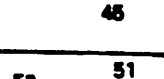
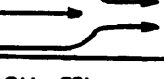
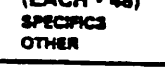
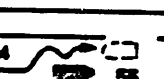
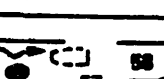
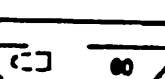
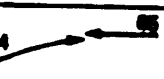
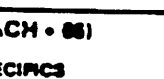
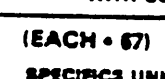
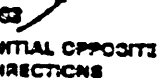
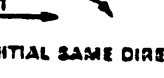

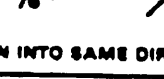


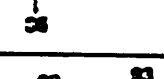
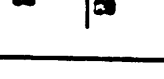
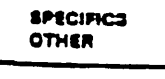

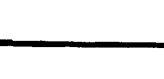
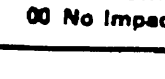



- (00) No impact

Code the number of the diagram that best describes the accident circumstance

(98) Other accident type (specify):

(99) Unknown

**STOP HERE IF GV07 DOES NOT EQUAL 01 - 49**

Category	Configuration	ACCIDENT TYPES (Includes Intent)			
I Single Driver	A Right Roadside Departure	 01 DRIVE OFF ROAD	 02 CONTROL/ TRACTION LOSS	 03 AVOID COLLISION WITH VEH.. PED.. ANIM.	04 SPECIFICS OTHER
	B Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH.. PED.. ANIM.	09 SPECIFICS OTHER
	C Forward Impact	 11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	14 END DEPARTURE
II Same Trafficway Same Direction	D Rear-End	 20 STOPPED 21, 22, 23	 24 SLOWER 25, 26, 27	 28 DECEL. 29, 30, 31	30 SPECIFICS OTHER
	E Forward Impact	 34 CONTROL/ TRACTION LOSS	 36 CONTROL/ TRACTION LOSS	 38 AVOID COLLISION WITH VEH.	40 AVOID COLLISION WITH OBJECT
	F Sideswipe Angle	 44 45 46 47	 46 47	 48 49	49 SPECIFICS OTHER
III Same Trafficway Opposite Direction	G Head-On	 50 LATERAL MOVE	 51 (EACH - 52) SPECIFICS OTHER	 53 (EACH - 53) SPECIFICS UNKNOWN	
	H Forward Impact	 54 CONTROL/ TRACTION LOSS	 56 CONTROL/ TRACTION LOSS	 58 AVOID COLLISION WITH VEH.	60 AVOID COLLISION WITH OBJECT
	I Sideswipe Angle	 64 LATERAL MOVE	 65 (EACH - 66) SPECIFICS OTHER	 67 (EACH - 67) SPECIFICS UNKNOWN	
IV Change Trafficway Vehicle Turning	J Turn Across Path	 69 INITIAL OPPOSITE DIRECTIONS	 71 INITIAL SAME DIRECTIONS	 73 72	74 SPECIFICS OTHER
	K Turn Into Path	 77 78 TURN INTO SAME DIRECTION	 79 80 TURN INTO OPPOSITE DIRECTIONS	 81 82 83	84 SPECIFICS OTHER
V Intersecting Paths (Vehicle Damage)	L Straight Paths	 87 88	 89 90	 91 92	93 SPECIFICS OTHER
VI Miscellaneous	M Backing Etc.	 94 BACKING VEH.	 95 OTHER VEH. OR OBJECT	 96 OTHER ACCIDENT TYPE	97 UNKNOWN ACCIDENT TYPE
					98 NO IMPACT



## National Accident Sampling System-Crashworthiness Data System: General Vehicle Form

Page 5

## OCCUPANT RELATED

37. Driver Presence in Vehicle 1  
 (0) Driver not present  
 (1) Driver present  
 (9) Unknown
38. Number of Occupants This Vehicle 01  
 (00-96) Code actual number of occupants for this vehicle  
 (97) 97 or more  
 (99) Unknown
39. Number of Occupant Forms Submitted 01

## AIR BAG RELATED

40. Is this an AOPS Vehicle? 1  
 (0) No (includes unknown)  
 (1) Yes - researcher determined  
 (2) VIN determined air bag system  
 (3) VIN determined automatic (passive) belts  
 (4) VIN determined air bag and automatic (passive) belts
41. Air Bag(s) Deployment, First Seat Frontal 2  
 (0) Not equipped or not available  
 (1) No air bags deployed  
*Single Air Bag Vehicle*  
 (2) Driver air bag deployed  
 (3) Driver air bag, unknown if deployed  
*Multiple Air Bag Vehicle*  
 (4) Driver side only deployed  
 (5) Passenger side only deployed  
 (6) Driver and passenger side deployed  
 (7) Driver and passenger side unknown if deployed  
 (8) Air bag(s) deployed, details unknown  
 (9) Unknown
42. Air Bag(s) Deployment, Other Than First Seat Frontal 0  
 (0) Not equipped with an "other" air bag  
 (1) Deployed during accident (as a result of impact)  
 (2) Deployed inadvertently just prior to accident  
 (3) Deployed, details unknown  
 (4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)  
 (5) Unknown if deployed  
 (7) Nondeployed  
 (9) Unknown

Specify type of "other" air bag present: \_\_\_\_\_

## VEHICLE WEIGHT ITEMS

43. Vehicle Curb Weight 1,900  
 \_\_\_\_\_ Code weight to nearest 10 kilograms.  
 (045) Less than 450 kilograms  
 (610) 6,100 kilograms or more  
 (999) Unknown  
4,196 lbs X .4536 = 1,903 kgs

Source: \_\_\_\_\_

44. Vehicle Cargo Weight 1,000  
 \_\_\_\_\_ Code weight to nearest 10 kilograms.  
 (000) Less than 5 kilograms  
 (450) 4,500 kilograms or more  
 (999) Unknown

\_\_\_\_\_, \_\_\_\_\_ lbs X .4536 = \_\_\_\_\_ kgs

Source: \_\_\_\_\_ PHOTOS

## ROLLOVER DATA

45. Rollover 00  
 (00) No rollover (no overturning)  
*Rollover (primarily about the longitudinal axis)*  
 (01-16) Code the number of quarter turns  
 (17) Rollover, 17 or more quarter turns (specify): \_\_\_\_\_  
 (98) Rollover--end-over-end (i.e., primarily about the lateral axis)  
 (99) Rollover (overturn), details unknown
46. Rollover Initiation Type 00  
 (00) No rollover  
 (01) Trip-over  
 (02) Flip-over  
 (03) Turn-over  
 (04) Climb-over  
 (05) Fall-over  
 (06) Bounce-over  
 (07) Collision with another vehicle  
 (08) Other rollover initiation type specify): \_\_\_\_\_  
 (98) Rollover--end-over-end  
 (99) Unknown rollover initiation type
47. Location of Rollover Initiation 0  
 (0) No rollover  
 (1) On roadway  
 (2) On shoulder--paved  
 (3) On shoulder--unpaved  
 (4) On roadside or divided trafficway median  
 (8) Rollover--end-over-end  
 (9) Unknown
48. Rollover Initiation Object Contacted 00  
 (Note: Applicable codes on back of page)
49. Location on Vehicle Where Initial Principal Tripping Force Is Applied 0  
 (0) No rollover  
 (1) Wheels/tires  
 (2) Side plane  
 (3) End plane  
 (4) Undercarriage  
 (5) Other location on vehicle (specify): \_\_\_\_\_  
 (6) Non-contact rollover forces (specify): \_\_\_\_\_  
 (8) Rollover--end-over-end  
 (9) Unknown
50. Direction of Initial Roll 0  
 (0) No rollover  
 (1) Roll right - primarily about the longitudinal axis  
 (2) Roll left - primarily about the longitudinal axis  
 (8) Rollover--end-over-end  
 (9) Unknown roll direction

## CODES FOR ROLLOVER INITIATION OBJECT CONTACTED

- (00) No rollover
- (01-30) — Vehicle Number

### Noncollision

- (31) Turn-over — fall-over
- (32) No rollover impact initiation (end-over-end)
- (34) Jackknife

### Collision With Fixed Object

- (41) Tree ( $\leq 10$  cm in diameter)
- (42) Tree ( $> 10$  cm in diameter)
- (43) Shrubbery or bush
- (44) Embankment

- (45) Breakaway pole or post (any diameter)

### Nonbreakaway Pole or Post

- (50) Pole or post ( $\leq 10$  cm in diameter)
- (51) Pole or post ( $> 10$  cm but  $\leq 30$  cm in diameter)
- (52) Pole or post ( $> 30$  cm in diameter)
- (53) Pole or post (diameter unknown)

- (54) Concrete traffic barrier
- (55) Impact attenuator
- (56) Other traffic barrier (includes guardrail)  
(specify): \_\_\_\_\_

- (57) Fence
- (58) Wall
- (59) Building
- (60) Ditch or culvert
- (61) Ground
- (62) Fire hydrant
- (63) Curb
- (64) Bridge
- (68) Other fixed object (specify): \_\_\_\_\_

- (69) Unknown fixed object \_\_\_\_\_

### Collision with Nonfixed Object

- (70) Passenger car, light truck, van, or other vehicle not in-transport
- (71) Medium/heavy truck or bus not in-transport
- (76) Animal
- (77) Train
- (78) Trailer, disconnected in transport
- (79) Object fell from vehicle in-transport
- (88) Other nonfixed object (specify): \_\_\_\_\_

- (89) Unknown nonfixed object \_\_\_\_\_

- (98) Other event (specify): \_\_\_\_\_

- (99) Unknown event or object \_\_\_\_\_

**VERRIDE/UNDERRIDE (THIS VEHICLE)**

51. Front Override/Underride (this Vehicle) 0
52. Rear Override/Underride (this Vehicle) 0
- (0) No override/underride, or not an end-to-end impact between two CDS applicable vehicles, and no medium/heavy truck or bus underride
- Override (see specific CDC)*  
*[Between 2 CDS applicable vehicles (Bodytype, GV07 = 1-49)]*
- (1) 1st CDC  
 (2) 2nd CDC  
 (3) Other not automated CDC (specify): \_\_\_\_\_
- Underride (see specific CDC)*  
*[Between 2 CDS applicable vehicles (Bodytype, GV07 = 1-49)]*
- (4) 1st CDC  
 (5) 2nd CDC  
 (6) Other not automated CDC (specify): \_\_\_\_\_
- (7) Medium/heavy truck or bus override (of any configuration)  
 (9) Unknown

**HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V**

Values: (000)-(359) Code actual value  
 (997) Noncollision  
 (998) Impact with object  
 (999) Unknown

53. Heading Angle For This Vehicle 0 9 0
54. Heading Angle For Other Vehicle 0 9 0

**RECONSTRUCTION DATA**

55. Towed Trailing Unit 0
- (0) No towed unit  
 (1) Yes—towed trailing unit  
 (9) Unknown
56. Documentation of Trajectory Data for This Vehicle 0
- (0) No  
 (1) Yes
57. Post Collision Condition of Tree or Pole (For Highest Delta V) 0
- (0) Not collision (for highest delta V) with tree or pole  
 (1) Not damaged  
 (2) Cracked/sheared  
 (3) Tilted < 45 degrees  
 (4) Tilted ≥ 45 degrees  
 (5) Uprooted tree  
 (6) Separated pole from base  
 (7) Pole replaced  
 (8) Other (specify): \_\_\_\_\_
- (9) Unknown

**ACCIDENT RECONSTRUCTION PROGRAMS HIGHEST DELTA V**

58. Basis for Total (Resultant) Delta V (highest) 0 1

(00) No vehicle inspection

*Delta V Calculated*

- (01) Reconstruction program -damage only routine  
 (02) Reconstruction program -damage and trajectory routine  
 (03) Missing vehicle algorithm

*Delta V Not Calculated*

- (04) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.

*All vehicles within scope (CDC applicable) of reconstruction program but one of the collision conditions is beyond the scope of the reconstruction program or other acceptable reconstruction technique, regardless of adequacy of damage data.*

- (05) Rollover  
 (06) Other non-horizontal forces  
 (07) Sideswipe type damage  
 (08) Severe override  
 (09) Yielding object  
 (10) Overlapping damage  
 (11) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available, (specify): \_\_\_\_\_

- (98) Other, (specify): \_\_\_\_\_



## COMPUTER GENERATED CRASH SEVERITY

59. Total Delta V

0 1 9

Highest

\_\_\_\_ Nearest kmph (highest)

\_\_\_\_ Nearest kmph (secondary)

(NOTE: 000 means less than 0.5 kmph)  
 (160) 159.5 kmph and above  
 (999) Unknown

60. Longitudinal Component of Delta V

+ 0 1 9

Highest

\_\_\_\_ Nearest kmph (highest)

\_\_\_\_ Nearest kmph (secondary)

(NOTE: \_\_000 means greater than  
 -0.5 kmph and less than +0.5 kmph)  
 (±160) ±159.5 kmph and above  
 (\_999) Unknown

61. Lateral Component of Delta V

⊕ - 0 0 0

Highest

\_\_\_\_ Nearest kmph (highest)

\_\_\_\_ Nearest kmph (secondary)

(NOTE: \_\_000 means greater than -0.5 kmph  
 and less than +0.5 kmph)  
 (±160) ±159.5 kmph and above  
 (\_999) Unknown

62. Energy Absorption

0 2 6 4 0 026414 Nearest 100 joules (highest)

\_\_\_\_ Nearest 100 joules (secondary)

(NOTE: 0000 means less than 50 joules)  
 (9997) 999,650 joules or more  
 (9999) Unknown

63. Impact Speed

9 9 8

\_\_\_\_ Nearest kmph (highest)

\_\_\_\_ Nearest kmph (secondary)

(NOTE: 000 means less than 0.5 kmph)  
 (160) 159.5 kmph and above  
 (998) Trajectory algorithm not run  
 (999) Unknown

## DELTA V CONFIDENCE LEVEL

64. Confidence In Reconstruction Program Results (For Highest Delta V)

1

- (0) No reconstruction  
 (1) Collision fits model — results appear reasonable  
 (2) Collision fits model — results appear high  
 (3) Collision fits model — results appear low  
 (4) Borderline reconstruction — results appear reasonable

## OTHER SPEED ESTIMATE

65. Barrier Equivalent Speed

Highest

9 9 9

\_\_\_\_ Nearest kmph (highest)

\_\_\_\_ Nearest kmph (secondary)

(NOTE: 000 means less than 0.5 kmph)  
 (160) 159.5 kmph and above  
 (999) Unknown

IS MISSING VEHICLE ALGORITHM APPLICABLE FOR THIS VEHICLE? [ ] YES [ ] NO

IF YES: IS A COMPLETED PROGRAM SUMMARY INCLUDED? [ ] YES [ ] NO

ESTIMATED DELTA V	VEHICLE INSPECTION
<p>66. Estimated Highest Delta V (Researcher Determined) <u>0</u></p> <p>(0) Reconstruction Delta V coded</p> <p><i>Estimated Delta V</i></p> <p>(1) Less than 10 kmph</p> <p>(2) <math>\geq 10</math> kmph but <math>&lt; 25</math> kmph</p> <p>(3) <math>\geq 25</math> kmph but <math>&lt; 40</math> kmph</p> <p>(4) <math>\geq 40</math> kmph but <math>&lt; 55</math> kmph</p> <p>(5) <math>\geq 55</math> kmph</p> <p><i>Other estimates of damage severity</i></p> <p>(6) Minor</p> <p>(7) Moderate</p> <p>(8) Severe</p> <p>(9) Unknown</p>	<p>67. Type of Vehicle Inspection <u>3</u></p> <p>(0) No inspection</p> <p>(1) Vehicle fully repaired-no damage evident</p> <p>(2) Partial inspection (specify): _____</p> <p>(3) Complete inspection</p>

\*\*\* IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV67 = 0), \*\*\*

DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS

\*\*\* IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE \*\*\*

THE EXTERIOR VEHICLE, INTERIOR VEHICLE,  
OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.

**U.S. Department of Transportation  
National Highway Traffic Safety  
Administration**

# EXTERIOR VEHICLE FORM

**NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM**

1. <del>Primary Sampling Unit Number</del>		3. Vehicle Number	
2. Case Number - Stratum			
9 5 0 2		0 1	

## VEHICLE IDENTIFICATION

VIN	<u>1 F T E X 1 S N 2 R K</u>	Model Year	<u>94</u>
Vehicle Make (specify):	<u>FORD</u>	Vehicle Model (specify):	<u>F-150 SUPERCAR</u>

## LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L	Location of Max Crush
1	FRONT BUMPER 139.7 cm (55.0")	FULL WIDTH OF FRONT BUMPER	CENTER OF BUMPER AT LICENSE PLATE FRAME

CRUSH PROFILE IN CENTIMETERS

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

**Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.**

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

[illegible]



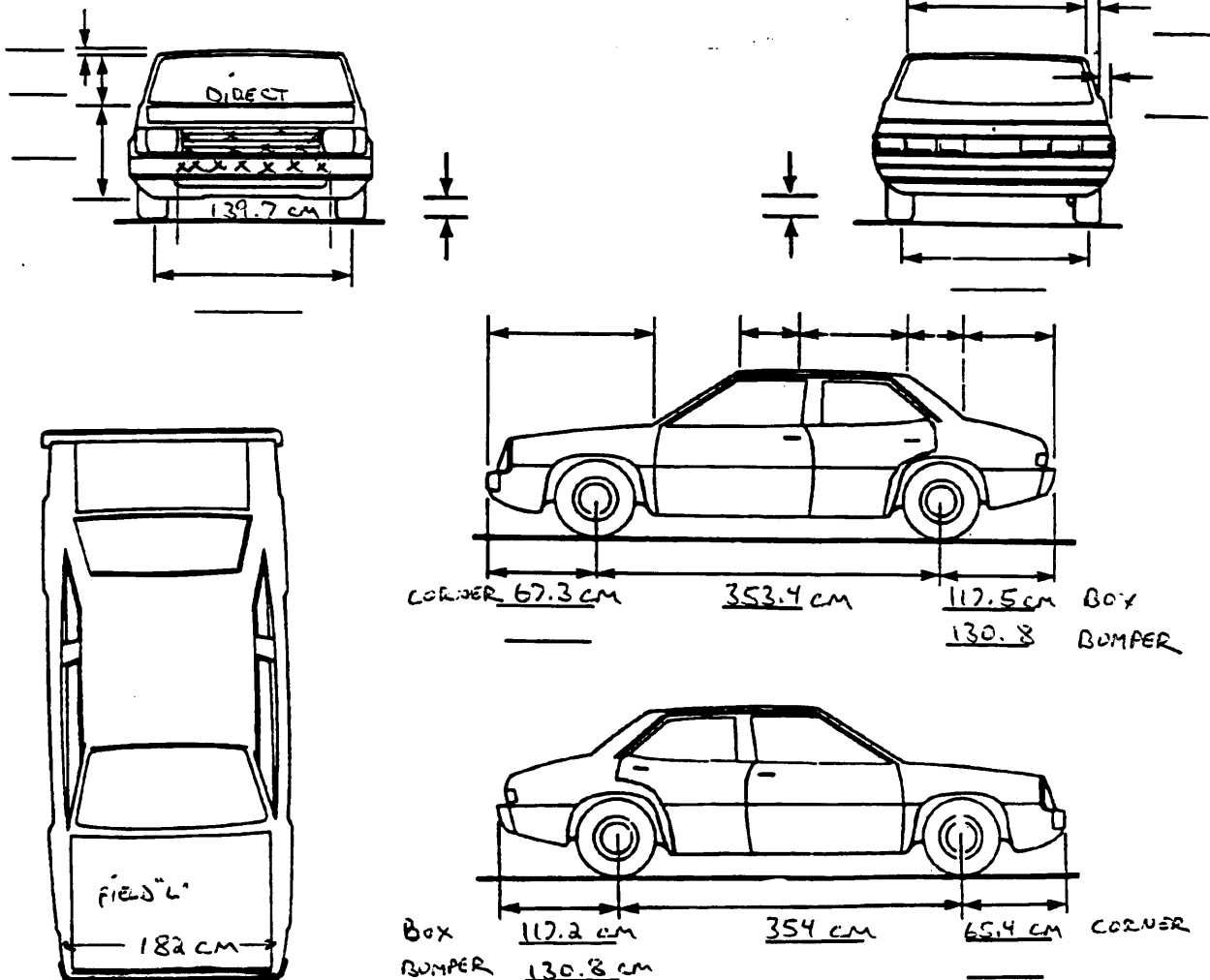
# ORIGINAL SPECIFICATIONS WORK SHEET

Wheelbase	<u>138.8</u> inches	x 2.54	=	<u>353</u> cm
Overall Length	<u>219.1</u> inches	x 2.54	=	<u>557</u> cm
Maximum Width	<u>79.0</u> inches	x 2.54	=	<u>201</u> cm
Curb Weight	<u>4,196</u> pounds	x .4536	=	<u>1,903</u> kg
Average Track	<u>      </u> inches	x 2.54	=	<u>      </u> cm
Front Overhang	<u>33.5</u> inches	x 2.54	=	<u>085</u> cm
Rear Overhang	<u>46.8</u> inches	x 2.54	=	<u>119</u> cm
Undeformed End Width	<u>71.8</u> inches	x 2.54	=	<u>182</u> cm
Engine Size: cyl./displ.	<u>      </u> cc	x .001	=	<u>      </u> L
	<u>302</u> CID	x .0164	=	<u>5.0</u> L

## VEHICLE DAMAGE SKETCH

<b>TIRE—WHEEL DAMAGE</b> a. Rotation physically restricted RF <u>2</u> LF <u>2</u> RR <u>2</u> LR <u>2</u>  (1) Yes (2) No (8) NA (9) Unk.		<b>ORIGINAL SPECIFICATIONS</b> Wheelbase <u>353</u> cm Overall Length <u>557</u> cm Maximum Width <u>201</u> cm Curb Weight <u>1903</u> kg Average Track _____ cm Front Overhang <u>85</u> cm Rear Overhang <u>119</u> cm Undeformed End Width <u>182</u> cm Engine Size: cyl./displ. <u>5.0</u> L		<b>WHEEL STEER ANGLES</b> (For locked front wheels or displaced rear axles only) RF ± _____ ° LF ± _____ ° RR ± _____ ° LR ± _____ ° Within ± 5 degrees
<b>TYPE OF TRANSMISSION</b> <input type="checkbox"/> Manual <input checked="" type="checkbox"/> Automatic <b>END SHIFT ≥ 10 CM</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>DRIVE WHEELS</b> <input type="checkbox"/> FWD <input checked="" type="checkbox"/> RWD <input type="checkbox"/> 4WD Approximate Cargo Weight <u>N/A</u> kg		

## MEASUREMENTS IN CENTIMETERS



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewalls, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.

Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.



**COLLISION DEFORMATION CLASSIFICATION****HIGHEST DELTA "V"**

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Longitudinal or Lateral Location	(5) Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>02</u>	5. <u>02</u>	6. <u>1 2</u>	7. <u>F</u>	8. <u>0</u>	9. <u>E</u>	10. <u>W</u>	11. <u>0 1</u>

**Second Highest Delta "V"**

12. <u>    </u>	13. <u>    </u>	14. <u>    </u>	15. <u>    </u>	16. <u>    </u>	17. <u>    </u>	18. <u>    </u>	19. <u>    </u>
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------

**CRUSH PROFILE IN CENTIMETERS**

The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. (ALL MEASUREMENTS ARE IN CENTIMETERS.)

**HIGHEST DELTA "V"**

20. <u>L</u>	21. <u>C<sub>1</sub></u>	<u>C<sub>2</sub></u>	<u>C<sub>3</sub></u>	<u>C<sub>4</sub></u>	<u>C<sub>5</sub></u>	<u>C<sub>6</sub></u>	22. <u>±D</u>
<u>182</u>	<u>005</u>	<u>003</u>	<u>006</u>	<u>006</u>	<u>004</u>	<u>003</u>	<u>+ 000</u>

**Second Highest Delta "V"**

23. <u>L</u>	24. <u>C<sub>1</sub></u>	<u>C<sub>2</sub></u>	<u>C<sub>3</sub></u>	<u>C<sub>4</sub></u>	<u>C<sub>5</sub></u>	<u>C<sub>6</sub></u>	25. <u>±D</u>
<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>+      </u>
<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	<u>-      </u>

26. Undeformed End Width  
(Coded when highest severity impact is an end plane impact.) 182  
 \_\_\_\_\_ Code to the nearest centimeter  
 (250) 250 centimeters or more  
 (998) No highest severity end plane impact  
 (999) Unknown

27. Direct Damage Width  
(For highest severity impact) 140  
 \_\_\_\_\_ Code to the nearest centimeter  
 (250) 250 centimeters or more  
 (999) Unknown

28. Original Wheelbase  
 \_\_\_\_\_ Code to the nearest centimeter 353  
 (650) 650 centimeters or more  
 (999) Unknown  
 \_\_\_\_\_ inches X 2.54 = \_\_\_\_\_ centimeters

29. Original Average Track Width  
 \_\_\_\_\_ Code to the nearest centimeter 999  
 (185) 185 centimeters or more  
 (999) Unknown  
 \_\_\_\_\_ inches X 2.54 = \_\_\_\_\_ centimeters



		FUEL SYSTEM	
30. Are CDCs Documented but Not Coded on The Automated File?	<u>0</u>	35. Location of Fuel Tank-1 Filler Cap	<u>4</u>
(0) No		36. Location of Fuel Tank-2 Filler Cap	<u>2</u>
(1) Yes		(0) No fuel tank	
		(1) On back plane	
		(2) Aft of center of the rear wheels (rear axle) on left side plane	
		(3) Aft of center of the rear wheels (rear axle) on right side plane	
		(4) Forward of center of the rear wheels (rear axle) on left side plane	
		(5) Forward of center of the rear wheels (rear axle) on right side plane	
		(6) Over the center of the rear wheels (rear axle) on left side plane	
		(7) Over the center of the rear wheels (rear axle) on right side plane	
		(8) Other (specify): _____	
		(9) Unknown	
31. Researcher's Assessment of Vehicle Disposition	<u>1</u>	37. Type of Fuel Tank-1	<u>1</u>
(0) Not towed due to vehicle damage		38. Type of Fuel Tank-2	<u>1</u>
(1) Towed due to vehicle damage		(0) No fuel tank (electrical vehicle)	
(9) Unknown		(1) Metallic	
		(2) Non-metallic	
		(9) Unknown	
32. Is This A Multi-Stage Manufactured Vehicle And/Or A Certified Altered Vehicle?	<u>0</u>	39. Location of Fuel Tank-1	<u>4</u>
(0) No post manufacturer modifications		40. Location of Fuel Tank-2	<u>1</u>
(1) Yes - post manufacturer modifications (specify): _____		(0) No fuel tank	
_____		(1) Aft of center of the rear wheels (rear axle) centered	
_____		(2) Aft of center of the rear wheels (rear axle) left side	
(Include photograph of CERTIFICATION PLACARD in case report)		(3) Aft of center of the rear wheels (rear axle) right side	
(9) Unknown if vehicle is modified		(4) Forward of center of the rear wheels (rear axle) centered	
		(5) Forward of center of the rear wheels (rear axle) left side	
		(6) Forward of center of the rear wheels (rear axle) right side	
		(7) Over center of the rear wheels (rear axle)	
		(8) Other (specify): _____	
		(9) Unknown	
<b>FIRE OCCURRENCE</b>		41. Damage to Fuel Tank-1	<u>1</u>
33. Fire Occurrence	<u>0</u>	42. Damage to Fuel Tank-2	<u>1</u>
(0) No fire		(0) No fuel tank	
Yes, fire occurred		(1) No damage to fuel tank	
(1) Minor		(2) Deformed, no seam failure	
(2) Major		(3) Deformed, with a seam failure	
(9) Unknown		(4) Punctured	
		(5) Lacerated (ripped)	
		(6) Abraded (scraped)	
		(7) Filler neck separation from the fuel tank	
		(8) Other damage (specify): _____	
		(9) Unknown	
34. Origin of Fire	<u>0</u>		
(0) No fire			
(1) Vehicle exterior (front, side, back, top)			
(2) Exhaust system			
(3) Fuel tank (and other fuel retention system parts)			
(4) Engine compartment			
(5) Cargo/trunk compartment			
(6) Instrument panel			
(7) Passenger compartment area			
(8) Other location (specify): _____			
(9) Unknown			

\*\*\* STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED \*\*\*

**DO NOT COMPLETE THE INTERIOR VEHICLE FORM.**



## INTERIOR VEHICLE FORM

1. ~~Primary Sampling Unit Number~~ \_\_\_\_\_2. Case Number - ~~Stratum~~ 95023. Vehicle Number 01

## INTEGRITY

4. Passenger Compartment Integrity 00

(00) No integrity loss

Yes, Integrity Was Lost Through

(01) Windshield

(02) Door (side)

(03) Door/hatch (back door)

(04) Roof

(05) Roof glass

(06) Side window

(07) Rear window (backlight)

(08) Roof and roof glass

(09) Windshield and door (side)

(10) Windshield and roof

(11) Side and rear window (side window and backlight)

(12) Windshield and side window

(13) Door and side window

(98) Other combination of above (specify): \_\_\_\_\_

(99) Unknown

Door, Tailgate or Hatch Opening

5. LF 1 6. RF 1 7. LR 0 8. RR 0 9. TG/H 0

(0) No door/gate/hatch

(1) Door/gate/hatch remained closed and operational

(2) Door/gate/hatch came open during collision

(3) Door/gate/hatch jammed shut

(8) Other (specify): \_\_\_\_\_

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch  
Opening in Collision. If IV05-IV09  $\neq$  2, Then code 010. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate or Hatch Came Open During Collision

(1) Door operational (no damage)

(2) Latch/striker failure due to damage

(3) Hinge failure due to damage

(4) Door structure failure due to damage

(5) Door support (i.e., pillar, sill, roof side rail,  
etc.) failure due to damage

(6) Latch/striker and hinge failure due to damage

(8) Other failure (specify): \_\_\_\_\_

(9) Unknown

## GLAZING

Type of Window/Windshield Glazing

15. WS 1 16. LF 2 17. RF 2 18. LR 2 19. RR 220. BL 2 21. Roof 0 22. Other 0

(0) No glazing

(1) AS-1 — Laminated

(2) AS-2 — Tempered

(3) AS-3 — Tempered-tinted (original)

(4) AS-2 — Tempered-with after market tint

(5) AS-3 — Tempered-tinted (with additional after market tint)

(6) AS-14 — Glass/Plastic

(7) Glazing removed prior to accident

(8) Other (specify): \_\_\_\_\_

(9) Unknown

Window Precrash Glazing Status

23. WS 1 24. LF 2 25. RF 2 26. LR 2 27. RR 228. BL 1 29. Roof 0 30. Other 0

(0) No glazing

(1) Fixed

(2) Closed

(3) Partially opened

(4) Fully opened

(7) Glazing removed prior to accident

(9) Unknown

Glazing Damage from Impact Forces

31. WS 1 32. LF 1 33. RF 1 34. LR 1 35. RR 136. BL 1 37. Roof 0 38. Other 0

(0) No glazing

(1) No glazing damage from impact forces

(2) Glazing in place and cracked from impact forces

(3) Glazing in place and holed from impact forces

(4) Glazing out-of-place (cracked or not) and not holed from  
impact forces

(5) Glazing out-of-place and holed from impact forces

(6) Glazing disintegrated from impact forces

(7) Glazing removed prior to accident

(9) Unknown if damaged

Glazing Damage from Occupant Contact

39. WS 2 40. LF 1 41. RF 1 42. LR 1 43. RR 144. BL 1 45. Roof 0 46. Other 0

(0) No glazing

(1) No occupant contact to glazing

(2) Glazing contacted by occupant but no glazing damage

(3) Glazing in place and cracked by occupant contact

(4) Glazing in place and holed by occupant contact

(5) Glazing out-of-place (cracked or not) by occupant  
contact and not holed by occupant contact(6) Glazing out-of-place by occupant contact and holed by  
occupant contact

(7) Glazing removed prior to accident

(8) Glazing disintegrated by occupant contact

(9) Unknown if contacted by occupant

**OCCUPANT AREA INTRUSION**

Note: If no intrusions, leave variables IV47-IV86 blank.

**INTRUDING COMPONENT***Interior Components*

- (01) Steering assembly  
 (02) Instrument panel left  
 (03) Instrument panel center  
 (04) Instrument panel right  
 (05) Toe pan  
 (06) A (A1/A2)-pillar  
 (07) B-pillar **NO INTRUSION**  
 (08) C-pillar  
 (09) D-pillar  
 (10) Side panel - forward of the A1/A2-pillar  
 (11) Door panel (side)  
 (12) Side panel - rear of the B-pillar  
 (13) Roof (or convertible top)  
 (14) Roof side rail  
 (15) Windshield  
 (16) Windshield header  
 (17) Window frame  
 (18) Floor pan (includes sill)  
 (19) Backlight header  
 (20) Front seat back  
 (21) Second seat back  
 (22) Third seat back  
 (23) Fourth seat back  
 (24) Fifth seat back  
 (25) Seat cushion  
 (26) Back door/panel (e.g., tailgate)  
 (27) Other interior component (specify): \_\_\_\_\_

*Exterior Components*

- (30) Hood  
 (31) Outside surface of this vehicle (specify): \_\_\_\_\_  
 (32) Other exterior object in the environment (specify): \_\_\_\_\_  
 (33) Unknown exterior object  
 (97) Catastrophic  
 (98) Intrusion of unlisted component(s) (specify): \_\_\_\_\_  
 (99) Unknown

**LOCATION OF INTRUSION**

Front Seat  
 (11) Left  
 (12) Middle  
 (13) Right

Fourth Seat  
 (41) Left  
 (42) Middle  
 (43) Right

Second Seat  
 (21) Left  
 (22) Middle  
 (23) Right

(97) Catastrophic  
 (98) Other enclosed area (specify) \_\_\_\_\_

(99) Unknown

Third Seat  
 (31) Left  
 (32) Middle  
 (33) Right

**MAGNITUDE OF INTRUSION**

- (1)  $\geq 3$  centimeters but  $< 8$  centimeters  
 (2)  $\geq 8$  centimeters but  $< 15$  centimeters  
 (3)  $\geq 15$  centimeters but  $< 30$  centimeters  
 (4)  $\geq 30$  centimeters but  $< 46$  centimeters  
 (5)  $\geq 46$  centimeters but  $< 61$  centimeters  
 (6)  $\geq 61$  centimeters  
 (7) Catastrophic  
 (9) Unknown

**DOMINANT CRUSH DIRECTION**

- (1) Vertical  
 (2) Longitudinal  
 (3) Lateral  
 (7) Catastrophic  
 (9) Unknown



## STEERING COLUMN

## INSTRUMENT PANEL

87. Steering Column Type 2

- (1) Fixed column  
 (2) Tilt column  
 (3) Telescoping column  
 (4) Tilt and telescoping column  
 (8) Other column type (specify): \_\_\_\_\_

(9) Unknown

88. Tilt Steering Column Adjustment 3

- (0) No tilt steering column  
 (1) Full up  
 (2) Between full up and center  
 (3) Center  
 (4) Between center and full down  
 (5) Full down  
 (9) Unknown

89. Telescoping Steering Column Adjustment 0

- (0) No telescoping steering column  
 (1) Full back  
 (2) Between full back and midpoint  
 (3) Midpoint  
 (4) Between midpoint and full forward  
 (5) Full forward  
 (9) Unknown

90. Steering Rim/Spoke Deformation 0 0

Code actual measured

deformation to the nearest centimeter

- (00) No steering rim deformation  
 (01-14) Actual measured value in centimeters  
 (15) 15 centimeters or more  
 (98) Observed deformation cannot be measured  
 (99) Unknown

91. Location of Steering Rim/Spoke Deformation 0 0

(00) No steering rim deformation

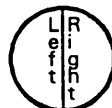
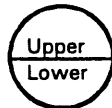
## Quarter Sections

- (01) Section A  
 (02) Section B  
 (03) Section C  
 (04) Section D



## Half Sections

- (05) Upper half of rim/spoke  
 (06) Lower half of rim/spoke  
 (07) Left half of rim/spoke  
 (08) Right half of rim/spoke



- (09) Complete steering wheel collapse  
 (10) Undetermined location  
 (99) Unknown

92. Odometer Reading 0 2 0,000

\_\_\_\_\_ kilometers

Code to the nearest 1,000 kilometers

(000) No odometer

(001) Less than 1,500 kilometers

(500) 499,500 kilometers or more

(999) Unknown

12,298 miles X 1.6093 = 19,791 kilometers

Source: \_\_\_\_\_

93. Instrument Panel Damage from Occupant Contact? 1

(0) No

(1) Yes

(9) Unknown

94. Type of Knee Bolster Covering 2

(0) No knee bolster

(1) Padded

(2) Rigid plastic

(8) Other (specify): \_\_\_\_\_

(9) Unknown

95. Knee Bolsters Deformed from Occupant Contact? 1

(0) No knee bolster

(1) No deformation

(2) Yes - deformation

(9) Unknown

96. Did Glove Compartment Door Open During Collision(s)? 1

(0) No glove compartment door

(1) No - door did not open

(2) Yes - door opened

(9) Unknown

97. Adaptive (Assistive) Driving Equipment 0

(0) No adaptive driving equipment

(1) Adaptive driving equipment installed

(Check all that apply.)

[ ] Hand controls for braking/acceleration

[ ] Steering control devices (attached to OEM steering wheel)

[ ] Steering knob attached to steering wheel

[ ] Low effort power steering (unit or device)

[ ] Replacement steering wheel (i.e., reduced diameter)

[ ] Joy-stick steering controls

[ ] Wheelchair tie-downs

[ ] Modification to seat belts (specify): \_\_\_\_\_

[ ] Additional or relocated switches (specify): \_\_\_\_\_

[ ] Raised roof

[ ] Wall-mounted head rest (used behind wheelchair)

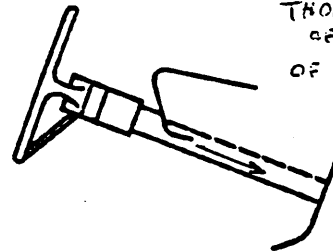
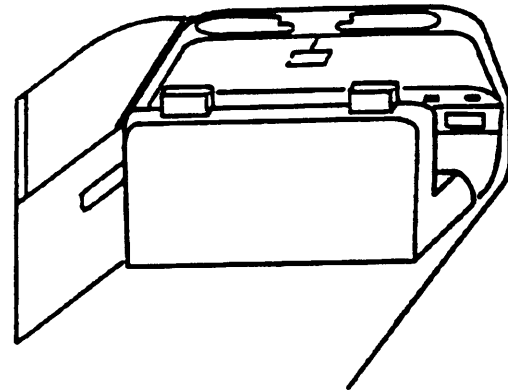
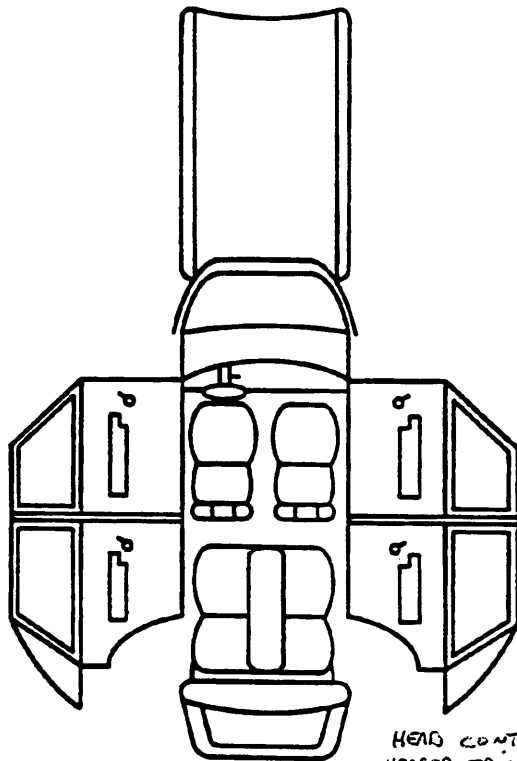
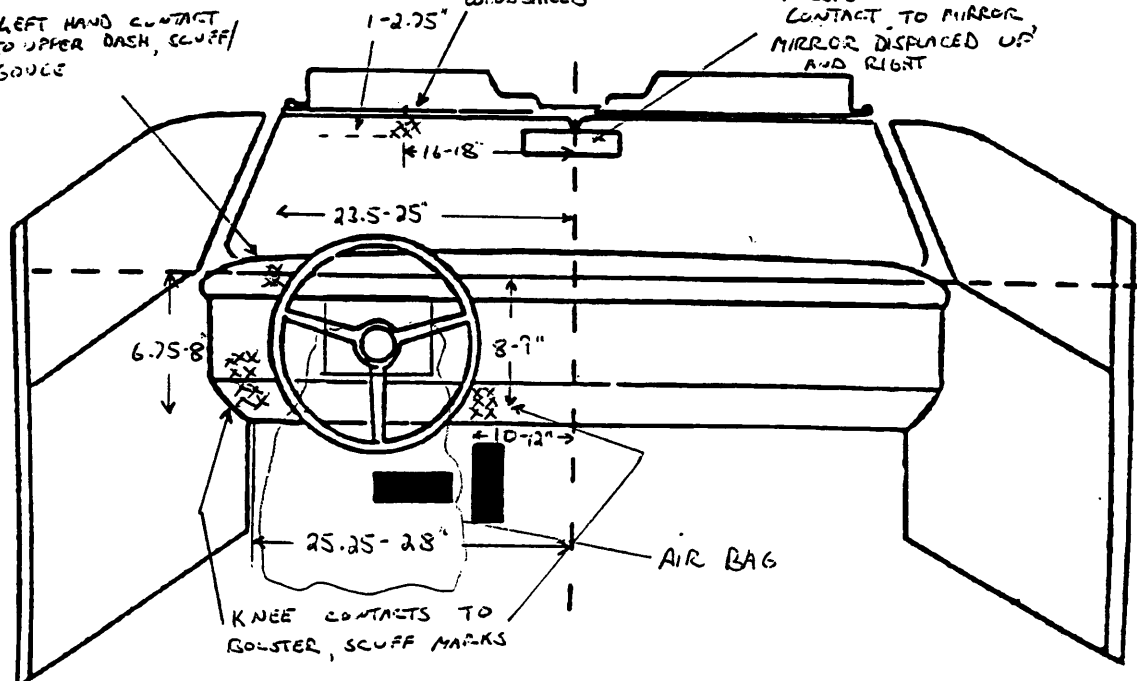
[ ] Other adaptive device (specify): \_\_\_\_\_

(9) Unknown

## VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment

BEST AVAILABLE COPY

THORACIC COLLISION  
OF COLUMN, 2.125"  
OF SHEAR SEPARATIONLEFT HAND CONTACT  
TO UPPER DASH, SCUFF/  
GOUGEHEAD CONTACT TO  
HEADER TRIM (DENT),  
AND DIRT SMUDGE ON  
WINDSHIELDPOSSIBLE RIGHT HAND  
CONTACT TO MIRROR  
MIRROR DISPLACED UP  
AND RIGHT

Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure).

Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.

Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

## POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	170	1	CHEST	FABRIC TRANSFERS	1
B	015	1	HEAD	DENT/OIL SMUDGE	1
C	002	1	(R) HAND	DISPLACED	3
D	014	1	KNEES	SCUFF	1
E	006	1	CHEST	COLUMN COMPRESSION	1
F					
G					
H					
I					
J					
K					
L					
M					
N					

## FRONT

- (001) Windshield  
 (002) Mirror  
 (003) Sunvisor  
 (004) Steering wheel rim  
 (005) Steering wheel hub/spoke  
 (006) Steering wheel (combination of codes 004 and 005)  
 (007) Steering column, transmission selector lever, other attachment  
 (008) Cellular telephone or CB radio  
 (009) Add on equipment (e.g., tape deck, air conditioner)  
 (010) Left instrument panel and below  
 (011) Center instrument panel and below  
 (012) Right instrument panel and below  
 (013) Glove compartment door  
 (014) Knee bolster  
 (015) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)  
 (016) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)  
 (017) Windshield reinforced by exterior object, (specify):  
 (019) Other front object (specify):

## LEFT SIDE

- (051) Left side interior surface, excluding hardware or armrests  
 (052) Left side hardware or armrest  
 (053) Left A (A1/A2)-pillar  
 (054) Left B-pillar  
 (055) Other left pillar (specify):  
 (056) Left side window glass  
 (057) Left side window frame  
 (058) Left side window sill  
 (059) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.  
 (060) Other left side object (specify):

## RIGHT SIDE

- (101) Right side interior surface, excluding hardware or armrests  
 (102) Right side hardware or armrest  
 (103) Right A (A1/A2)-pillar  
 (104) Right B-pillar  
 (105) Other right pillar (specify):  
 (106) Right side window glass  
 (107) Right side window frame  
 (108) Right side window sill  
 (109) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.  
 (110) Other right side object (specify):

## CODES FOR INTERIOR COMPONENTS

## INTERIOR

- (151) Seat, back support  
 (152) Belt restraint webbing/buckle  
 (153) Belt restraint B-pillar or door frame attachment point  
 (154) Other restraint system component (specify):  
 (155) Head restraint system  
 (160) Other occupants (specify):  
 (161) Interior loose objects  
 (162) Child safety seat (specify):  
 (163) Other interior object (specify):

## AIR BAG

- (170) Air bag-driver side  
 (175) Air bag compartment cover-driver side  
 (180) Air bag-passenger side  
 (185) Air bag compartment cover-passenger side  
 (190) Other air bag (specify):  
 (195) Other air bag compartment cover (specify):

## ROOF

- (201) Front header  
 (202) Rear header  
 (203) Roof left side rail  
 (204) Roof right side rail  
 (205) Roof or convertible top

## FLOOR

- (251) Floor (including toe pan)  
 (252) Floor or console mounted transmission lever, including console  
 (253) Parking brake handle  
 (254) Foot controls including parking brake

## REAR

- (301) Backlight (rear window)  
 (302) Backlight storage rack, door, etc.  
 (303) Other rear object (specify):

## ADAPTIVE (ASSISTIVE) DRIVING EQUIPMENT

- (401) Hand controls for braking/acceleration  
 (402) Steering control devices (attached to OEM steering wheel)  
 (403) Steering knob attached to steering wheel  
 (405) Replacement steering wheel (i.e., reduced diameter)  
 (406) Joy stick steering controls  
 (407) Wheelchair tie-downs  
 (408) Modification to seat belts, (specify):  
 (409) Additional or relocated switches, (specify):  
 (410) Raised roof  
 (411) Wall mounted head rest (used behind wheel chair)  
 (412) Other adaptive device (specify):

## CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain  
 (2) Probable  
 (3) Possible  
 (9) Unknown

# MANUAL RESTRAINTS

**NOTES:** Encode the applicable data for each seat position in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form. If a Child safety seat is present, encode the data on the back of this page. If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
F I R S T	Availability	4	3	4
	Evidence of usage	00	-	-
	Used in this crash?	00	-	-
	Proper Use	0	-	-
	Failure Modes	0	-	-
	Anchorage Adjustment	1	-	-
S E C O N D	Availability	4	3	4
	Evidence of usage	-	-	-
	Used in this crash?	-	-	-
	Proper Use	-	-	-
	Failure Modes	-	-	-
	Anchorage Adjustment	1	-	1
O T H E R	Availability			
	Evidence of usage			
	Used in this crash?			
	Proper Use			
	Failure Modes			
	Anchorage Adjustment			

## Manual (Active) Belt System Availability

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available - type unknown

## Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)
- (8) Other belt (specify): \_\_\_\_\_
- (9) Unknown

## Manual (Active) Belt System Use

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperable (specify): \_\_\_\_\_

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used - type unknown
- (08) Other belt used (specify): \_\_\_\_\_

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat - type unknown
- (18) Other belt used with child safety seat (specify): \_\_\_\_\_
- (99) Unknown if belt used

## Proper Use of Manual (Active) Belts

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

## Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): \_\_\_\_\_
- (8) Other improper use of manual belt system (specify): \_\_\_\_\_
- (9) Unknown

## Manual (Active) Belt Failure Modes During Accident

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): \_\_\_\_\_
- (6) Broken retractor
- (7) Combination of above (specify): \_\_\_\_\_
- (8) Other manual belt failure (specify): \_\_\_\_\_
- (9) Unknown

## Shoulder Belt Upper Anchorage Adjustment

- (0) No shoulder belt
- (1) No upper anchorage adjustment for shoulder belt

## Adjustable shoulder Belt Upper Anchorage

- (2) In full up position
- (3) In mid position
- (4) In full down position
- (5) Position unknown
- (9) Unknown if position has adjustable upper anchorage adjustment



**AUTOMATIC RESTRAINTS**

NOTES: Encode the data for each applicable front seat position. The attribute for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

**AIR BAGS**

		Left Front	Right Front	Other
F I R S T	Availability/Function	1	0	0
	Deployment	1	0	0
	Failure	1	0	0

**Air Bag System Availability/Function**

- (0) Not equipped/not available  
(1) Air bag

**Non-functional**

- (2) Air bag disconnected (specify): \_\_\_\_\_  
(3) Air bag not reinstalled  
(9) Unknown

**Are There Indications of Air Bag System Failure? (This Occupant Position)**

- (0) Not equipped/not available  
(1) No  
(2) Yes (specify): \_\_\_\_\_  
(9) Unknown

**Frontal Air Bag System Deployment (This Occupant Position)**

- (0) Not equipped/not available  
(1) Deployed during accident (as a result of impact)  
(2) Deployed inadvertently just prior to accident  
(3) Deployed, accident sequence undetermined  
(4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)  
(5) Unknown if deployed  
(7) Nondeployed  
(9) Unknown

**Air Bag(s) Deployment, Other Than First Seat Frontal (This Occupant Position)**

- (0) Not equipped with an "other" air bag  
(1) Deployed during accident (as a result of impact)  
(2) Deployed inadvertently just prior to accident  
(3) Deployed, details unknown  
(4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)  
(5) Unknown if deployed  
(7) Nondeployed  
(9) Unknown

**AUTOMATIC BELTS**

		Left	Right
F I R S T	Availability/Function	0	0
	Use	0	0
	Type	0	0
	Proper Use	0	0
	Failure Modes	0	0

**Automatic (Passive) Belt System Availability/Function**

- (0) Not equipped/not available  
(1) 2 point automatic belts  
(2) 3 point automatic belts  
(3) Automatic belts - type unknown

**Non-functional**

- (4) Automatic belts destroyed or rendered inoperative  
(9) Unknown

**Automatic (Passive) Belt System Use**

- (0) Not equipped/not available/destroyed or rendered inoperative  
(1) Automatic belt in use  
(2) Automatic belt not in use (manually disconnected, motorized track inoperative)  
(3) Automatic belt use unknown  
(9) Unknown

**Automatic (Passive) Belt System Type**

- (0) Not equipped/not available  
(1) Non-motorized system  
(2) Motorized system  
(9) Unknown

**Proper Use of Automatic (Passive) Belt System**

- (0) Not equipped/not available/not used  
(1) Automatic belt used properly  
(2) Automatic belt used properly with child safety seat

**Automatic Belt Used Improperly**

- (3) Automatic shoulder belt worn under arm  
(4) Automatic shoulder belt worn behind back  
(5) Automatic belt worn around more than one person  
(6) Lap portion of automatic belt worn on abdomen  
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): \_\_\_\_\_  
(8) Other improper use of automatic belt system (specify): \_\_\_\_\_  
(9) Unknown

**Automatic (Passive) Belt Failure Modes During Accident**

- (0) Not equipped/not available/not in use  
(1) No automatic belt failure(s)  
(2) Torn webbing (stretched webbing not included)  
(3) Broken buckle or latchplate  
(4) Upper anchorage separated  
(5) Other anchorage separated (specify): \_\_\_\_\_  
(6) Broken retractor  
(7) Combination of above (specify): \_\_\_\_\_  
(8) Other automatic belt failure (specify): \_\_\_\_\_  
(9) Unknown

# FIRST SEAT FRONTAL AIR BAGS

NOTES: Encode the applicable data *for the driver and first seat passenger* in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

	Driver	Passenger
Type of air bag?	1	0
Flaps open at tear points?	2	2
Flaps damaged?	2	2
Air bag damaged?	01	00
Source of air bag damage	01	00
Air bag tethered?	2	0
Air bag have vent ports?	2	0
Other occupant contact air bag?	1	0
Occupant wearing eyewear?	2	0

## Type of Air Bag

- (0) Not equipped/not available
- (1) Original manufacturer installed system
- (2) Retrofitted air bag
- (3) Replacement air bag
- (8) Unknown type of air bag
- (9) Unknown

## Did Air Bag Module Cover Flap(s) Open At Designated Tear Points?

- (0) Not equipped/not available
- (1) No
- (2) Yes
- (3) Deployed, unknown if flap(s) opened at designated tear points
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

## Were Air Bag Module Cover Flap(s) Damaged?

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify):  
OFFER SEPARATED
- (3) Deployed, unknown if air bag module cover flap(s) damaged
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

## Was There Damage To The Air Bag?

- (00) Not equipped/not available
- (01) Not damaged

### Yes - Air Bag Damage

- (02) Ruptured
- (03) Cut
- (04) Torn
- (05) Holed
- (06) Burned
- (07) Abraded
- (88) Other damage (specify):

## Source of Air Bag Damage

- (00) Not equipped/not available
- (01) Not damaged
- (02) Object worn by occupant, (specify):
- (03) Object carried by occupant, (specify):
- (04) Adaptive/assistive controls, (specify):
- (05) Fire in vehicle
- (06) Thermal burns
- (07) Rescue or emergency efforts
- (88) Other damage source (specify):
- (95) Damaged, unknown source
- (96) Deployed, unknown if damaged
- (97) Not deployed
- (98) Unknown if deployed
- (99) Unknown

## Was The Air Bag Tethered?

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify number of tether straps):  
4
- (3) Deployed, unknown if tethered
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

## Did The Air Bag Have Vent Ports?

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify number of vent ports):  
2
- (3) Deployed, unknown if vent ports present
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

## Was the Air Bag in this Occupant's Position Contacted by Another Occupant?

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify):
- (3) Deployed, unknown if other occupant contact to air bag
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

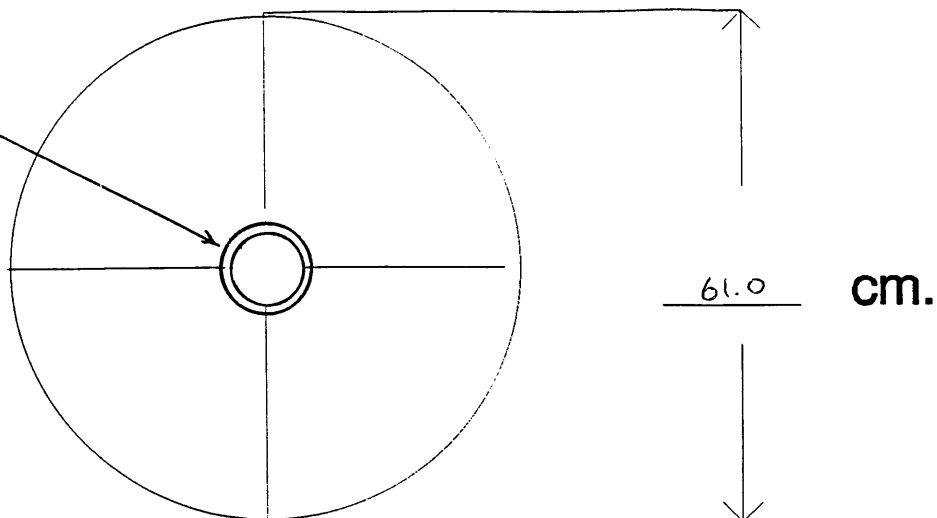
## Was This Occupant Wearing Eye-wear?

- (0) Not equipped/not available
- (1) No
- (2) Eyeglasses/sunglasses
- (3) Contact lenses
- (4) Deployed, unknown if eyewear worn
- (7) Not deployed
- (8) Unknown if deployed
- (9) Unknown

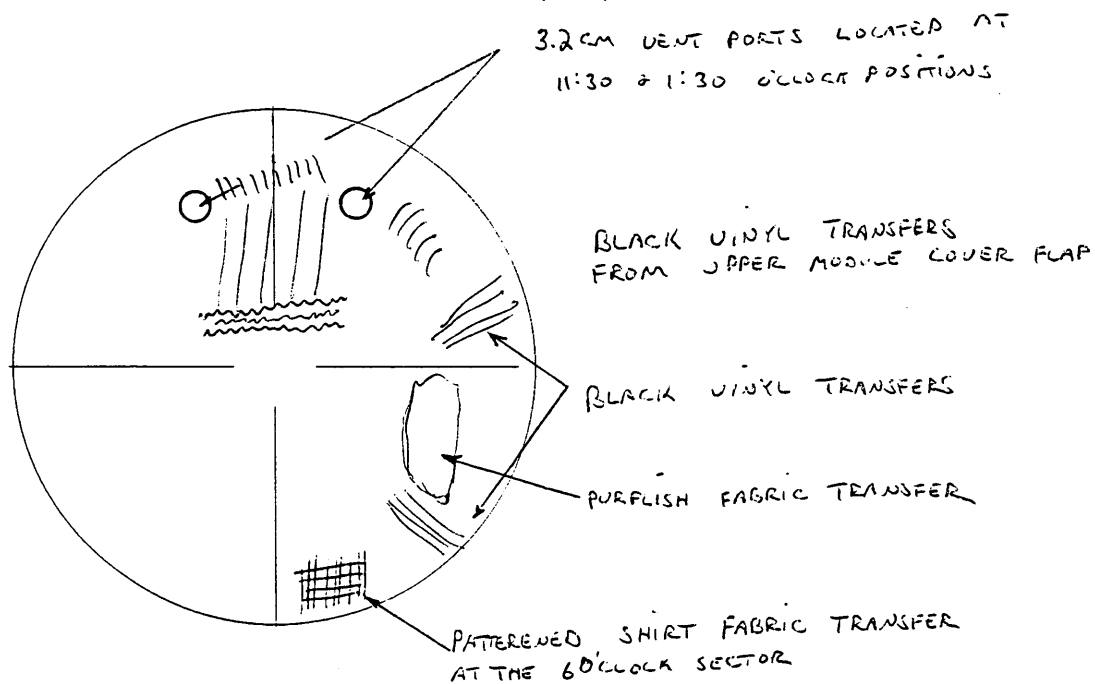
## DRIVER AIR BAG DAMAGE AND CONTACT SKETCHES

## 1. SKETCH DAMAGE AND CONTACT EVIDENCE ON DRIVER AIR BAG (Front)

2 ROWS OF STITCHING  
FOR TETHER  
REINFORCEMENT  
16.5 cm (6.5")  
DIAMETER



## 2. SKETCH DAMAGE AND CONTACT EVIDENCE ON DRIVER AIR BAG (Back)

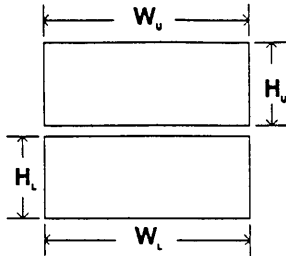


## DRIVER AIR BAG SKETCHES (Cont'd)

## 3. DRIVER AIR BAG MODULE COVER FLAP SIZE (DOUBLE)

a. Upper Flap

b. Lower Flap

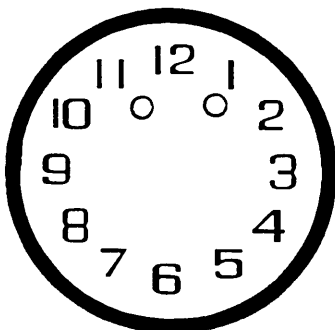
\* width ( $W_U$ ) 20.3 cmwidth ( $W_L$ ) 20.3 cmheight ( $H_U$ ) 12.4 cmheight ( $H_L$ ) 3.8 cm

\* NOTE: UPPER MODULE COVER FLAP SEPARATED AS A RESULT OF DEPLOYMENT (MEASUREMENTS PROVIDED ARE TYPICAL)

## 4. SKETCH OF OTHER TYPE OF AIR BAG MODULE FLAP AND SIZE

## 5. SKETCH OF OTHER TYPE OF AIR BAG VENT PORTS

## 6. SKETCH LOCATION OF CIRCULAR AIR BAG VENT PORTS



VENT PORTS LOCATED AT 11:30 AND 1:30 O'CLOCK POSITIONS



**HEAD RESTRAINTS/SEAT EVALUATION**

**NOTES:** Encode the applicable data for each seat position in the vehicle. The attribute for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
<b>FIRST</b>	Head Restraint Type/Damage	3	0	3
	Seat Type	06	06	06
	Seat Performance	1	1	1
	Seat Orientation	1	1	1
	Seat Track Position	6	6	6
	Seat Back Incline Pre/Post Impact	23	23	23
<b>SECOND</b>	Head Restraint Type/Damage	0	0	0
	Seat Type	09	09	09
	Seat Performance	1	1	1
	Seat Orientation	1	1	1
	Seat Track Position	1	1	1
	Seat Back Incline Pre/Post Impact	14	14	14
<b>THIRD</b>	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			
	Seat Track Position			
	Seat Back Incline Pre/Post Impact			
<b>OTHER</b>	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			
	Seat Track Position			
	Seat Back Incline Pre/Post Impact			

**DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE  
(I.E., UNUSUAL OCCUPANT CONTACT PATTERN)**

**HEAD RESTRAINTS/SEAT EVALUATION****Head Restraint Type/Damage by Occupant at This Occupant Position**

- (0) No head restraints
- (1) Integral — no damage
- (2) Integral — damaged during accident
- (3) Adjustable — no damage
- (4) Adjustable — damaged during accident
- (5) Add-on — no damage
- (6) Add-on — damaged during accident
- (8) Other  
Specify: \_\_\_\_\_
- (9) Unknown

**Seat Type (this Occupant Position)**

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., column supported)
- (09) Other seat type (specify):  
BENCH w/ FOLDING CUSHIONS
- (10) Box mounted seat (i.e., van type)
- (99) Unknown

**Seat Performance (this Occupant Position)**

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks or "seat back" failed (specify): \_\_\_\_\_
- (4) Seat tracks/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): \_\_\_\_\_
- (7) Combination of above (specify): \_\_\_\_\_
- (8) Other (specify): \_\_\_\_\_
- (9) Unknown

**Seat Orientation (this Occupant Position)**

- (0) Occupant not seated or no seat
- (1) Forward facing seat
- (2) Rear facing seat
- (3) Side facing seat (inward)
- (4) Side facing seat (outward)
- (8) Other (specify): \_\_\_\_\_
- (9) Unknown

**Seat Track Adjusted Position Prior To Impact**

- (0) Occupant not seated or no seat
- (1) Non-adjustable seat track
- Adjustable Seat Track*
- (2) Seat at forward most track position
- (3) Seat between forward most and middle track positions
- (4) Seat at middle track position
- (5) Seat between middle and rear most track positions
- (6) Seat at rear most track position
- (9) Unknown

**Seat Back Incline Prior and Post Impact**

- (00) Occupant not seated or no seat
- (01) Not adjustable

*Upright prior to impact*

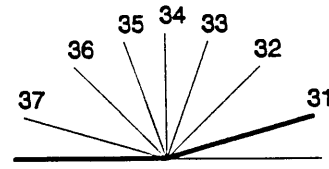
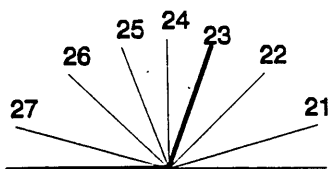
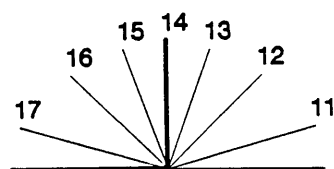
- (11) Moved to completely rearward position
- (12) Moved to rearward midrange position
- (13) Moved to slightly rearward position
- (14) Retained pre-impact position
- (15) Moved to slightly forward position
- (16) Moved to forward midrange position
- (17) Moved to completely forward position

*Slightly reclined prior to impact*

- (21) Moved to completely rearward position
- (22) Moved to rearward midrange position
- (23) Retained pre-impact position
- (24) Moved to upright position
- (25) Moved to slightly forward position
- (26) Moved to forward midrange position
- (27) Moved to completely forward position

*Completely reclined prior to impact*

- (31) Retained pre-impact position
- (32) Moved to rearward midrange position
- (33) Moved to slightly rearward position
- (34) Moved to upright position
- (35) Moved to slightly forward position
- (36) Moved to forward midrange position
- (37) Moved to completely forward position
- (99) Unknown

Coding diagrams for *Seat Back Incline Position Prior and Post Impact*

**DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE  
(I.E., UNUSUAL OCCUPANT CONTACT PATTERN)**

## CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

### 1. Type of Child Safety Seat

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):  
\_\_\_\_\_
- (8) Unknown child safety seat type
- (9) Unknown if child safety seat used

### 2. Child Safety Seat Orientation

- (00) No child safety seat
- Designed for Rear Facing for This Age/Weight
- (01) Rear facing
- (02) Forward facing
- (08) Other orientation (specify):  
\_\_\_\_\_
- (09) Unknown orientation

- Designed for Forward Facing for This Age/Weight
- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):  
\_\_\_\_\_

- (19) Unknown orientation

- Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):  
\_\_\_\_\_

- (29) Unknown orientation

- (99) Unknown if child safety seat used

### 3. Child Safety Seat Harness Usage

### 4. Child Safety Seat Shield Usage

- 5. Child Safety Seat Tether Usage
- Note: Options Below Are Used for Variables 3-5.
- (00) No child safety seat

Not Designed with Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

- (99) Unknown if child safety seat used

### 6. Child Safety Seat Make/Model

(Specify make/model and occupant number)

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**EJECTION/ENTRAPMENT DATA**

Complete the following if the researcher has any indication that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

**EJECTION** No [ ☒ ] Yes [ ☐ ]

Describe indications of ejection and body parts involved in partial ejection(s):

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Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

**Ejection**

- (1) Complete ejection  
(2) Partial ejection  
(3) Ejection, Unknown degree  
(9) Unknown

**Ejection Area**

- (1) Windshield  
(2) Left front  
(3) Right front  
(4) Left rear  
(5) Right rear  
(6) Rear

**(7) Roof**

- (8) Other area (e.g., back of pickup, etc.) (specify):  
\_\_\_\_\_

**(9) Unknown****Ejection Medium**

- (1) Door/hatch/tailgate  
(2) Nonfixed roof structure  
(3) Fixed glazing  
(4) Nonfixed glazing (specify):  
\_\_\_\_\_

**(5) Integral structure**

- (8) Other medium (specify):  
\_\_\_\_\_

**(9) Unknown****Medium Status (Immediately Prior to Impact)**

- (1) Open  
(2) Closed  
(3) Integral structure  
(9) Unknown

**ENTRAPMENT** No [ ☒ ] Yes [ ☐ ]

Describe entrapment mechanism: \_\_\_\_\_

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Component(s): \_\_\_\_\_

(Note in vehicle interior diagram)



**ATTACHMENT G**

**NASS Occupant Forms**



# OCCUPANT ASSESSMENT FORM

1. ~~Primary Sampling Unit Number~~

2. Case Number - ~~Stratum~~

3. Vehicle Number

4. Occupant Number

9 5 0 2

0 1

0 1

## OCCUPANT'S CHARACTERISTICS

5. Occupant's Age

Code actual age at time of accident.

(00) Less than one year old (specify by month):

(97) 97 years and older

(99) Unknown

5 6

6. Occupant's Sex

(1) Male

(2) Female-not reported pregnant

(3) Female-pregnant-1st trimester(1st-3rd month)

(4) Female-pregnant-2nd trimester(4th-6th month)

(5) Female-pregnant-3rd trimester(7th-9th month)

(6) Female-pregnant-term unknown

(9) Unknown

1

7. Occupant's Height

Code actual height to the nearest  
centimeter.

(999) Unknown  
70-72"

71 inches X 2.54 = 180 centimeters

1 8 0

8. Occupant's Weight

Code actual weight to the nearest  
kilogram.

(999) Unknown

210 pounds X .4536 = 095 kilograms

0 9 5

9. Occupant's Role

(1) Driver

(2) Passenger

(9) Unknown

1

## OCCUPANT'S SEATING

10. Occupant's Seat Position

*Front Seat*

(11) Left side

(12) Middle

(13) Right side

(14) Other (specify):

(15) On or in the lap of another occupant

1 1

*Second Seat*

(21) Left side

(22) Middle

(23) Right side

(24) Other (specify):

(25) On or in the lap of another occupant

*Third Seat*

(31) Left side

(32) Middle

(33) Right side

(34) Other (specify):

(35) On or in the lap of another occupant

*Fourth Seat*

(41) Left side

(42) Middle

(43) Right side

(44) Other (specify):

(45) On or in the lap of another occupant

(97) In or on unenclosed area

(98) Other seat (specify):

(99) Unknown

11. Occupant's Posture

(0) Normal posture

*Abnormal posture*

(1) Kneeling or standing on seat

(2) Lying on or across seat

(3) Kneeling, standing or sitting in front of seat

(4) Sitting sideways or turned to talk with another  
occupant or to look out a rear window

(5) Sitting on a console

(6) Lying back in a reclined seat position

(7) Bracing with feet or hands on a surface in front  
of seat

(8) Other abnormal posture (specify):

(9) Unknown

0

**EJECTION/ENTRAPMENT****12. Ejection**0

- (0) No ejection
- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

**13. Ejection Area**0

- (0) No ejection
- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear
- (7) Roof
- (8) Other area (e.g., back of pickup, etc.)  
(specify): \_\_\_\_\_
- (9) Unknown

**14. Ejection Medium**0

- (0) No ejection
- (1) Door/hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify): \_\_\_\_\_
- (5) Integral structure
- (8) Other medium (specify): \_\_\_\_\_
- (9) Unknown

**15. Medium Status (Immediately Prior To Impact)** 0

- (0) No ejection
- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

**16. Entrapment**0

- (0) Not entrapped/exit not inhibited
- (1) Entrapped/pinned - mechanically restrained
- (2) Could not exit vehicle due to jammed doors, fire, etc.  
(specify): \_\_\_\_\_
- (9) Unknown

**17. Occupant Mobility**1

- (0) Occupant fatal before removed from vehicle
- (1) Removed from vehicle while unconscious or disoriented
- (2) Removed from vehicle due to injuries
- (3) Exited vehicle with some assistance
- (4) Exited vehicle under own power
- (5) Occupant fully ejected
- (9) Unknown

## BELT SYSTEM FUNCTION

18. Manual (Active) Belt System Availability 4

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown

*Integral Belt Partially Destroyed*

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)
- (8) Other belt (specify): \_\_\_\_\_

(9) Unknown

19. Manual (Active) Belt System Use 00

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): \_\_\_\_\_

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used—type unknown
- (08) Other belt used (specify): \_\_\_\_\_

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat—type unknown
- (18) Other belt used with child safety seat (specify): \_\_\_\_\_
- (99) Unknown if belt used

20. Proper Use of Manual (Active) Belts 0

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

*Belt Used Improperly*

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): \_\_\_\_\_

(8) Other improper use of manual belt system (specify): \_\_\_\_\_

(9) Unknown

21. Manual (Active) Belt Failure Modes During Accident 0

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): \_\_\_\_\_

- (6) Broken retractor
- (7) Combination of above (specify): \_\_\_\_\_

(8) Other manual belt failure (specify): \_\_\_\_\_

(9) Unknown

22. Shoulder Belt Upper Anchorage Adjustment 1

- (0) No shoulder belt
- (1) No upper anchorage adjustment for shoulder belt

*Adjustable shoulder Belt Upper Anchorage*

- (2) In full up position
- (3) In mid position
- (4) In full down position
- (5) Position unknown
- (9) Unknown if position has adjustable upper anchorage adjustment

23. Automatic (Passive) Belt System Availability/Function 0

- (0) Not equipped/not available
- (1) 2 point automatic belts
- (2) 3 point automatic belts
- (3) Automatic belts - type unknown

*Non-functional*

- (4) Automatic belts destroyed or rendered inoperative
- (9) Unknown

24. Automatic (Passive) Belt System Use 0

- (0) Not equipped/not available/destroyed or rendered inoperative
- (1) Automatic belt in use
- (2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify): \_\_\_\_\_
- (3) Automatic belt use unknown
- (9) Unknown

25. Automatic (Passive) Belt System Type 0

- (0) Not equipped/not available
- (1) Non-motorized system
- (2) Motorized system
- (9) Unknown

26. Proper Use of Automatic (Passive) Belt System 0

- (0) Not equipped/not available/not used
- (1) Automatic belt used properly
- (2) Automatic belt used properly with child safety seat

*Automatic Belt Used Improperly*

- (3) Automatic shoulder belt worn under arm
- (4) Automatic shoulder belt worn behind back
- (5) Automatic belt worn around more than one person
- (6) Lap portion of automatic belt worn on abdomen
- (7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): \_\_\_\_\_

(8) Other improper use of automatic belt system (specify): \_\_\_\_\_

(9) Unknown

27. Automatic (Passive) Belt Failure Modes During Accident 0

- (0) Not equipped/not available/not in use
- (1) No automatic belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): \_\_\_\_\_

(6) Broken retractor

(7) Combination of above (specify): \_\_\_\_\_

(8) Other automatic belt failure (specify): \_\_\_\_\_

(9) Unknown



## POLICE REPORTED RESTRAINT USE

## AIR BAG SYSTEM FUNCTION

28. Police Reported Belt Use 0

- (0) None used
- (1) Police did not indicate belt use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Automatic belt
- (8) Other type belt, (specify):

(9) Police indicated "unknown"

29. Police Reported Air Bag Availability/Function 1

- (0) No air bag available
- (1) Police did not indicate air bag availability/function
- (2) Deployed
- (3) Not deployed
- (4) Unknown if deployed
- (9) Police indicated "unknown"

Check the Primary Source Used In Determining Belt Use.

- [ ] Not equipped/not available/destroyed or rendered inoperative
- [✓] Vehicle inspection
- [ ] Official injury data
- [ ] Driver/occupant interview
- [ ] Other (specify):

[ ] Unknown if belt used

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30. Frontal Air Bag System Availability/Function (This Occupant Position) 1

- (0) Not equipped/not available
- (1) Air bag

*Non-functional*

(2) Air bag disconnected (specify):

- (3) Air bag not reinstalled
- (9) Unknown

31. Frontal Air Bag System Deployment (This Occupant Position) 1

- (0) Not equipped/not available
- (1) Deployed during accident (as a result of impact)
- (2) Deployed inadvertently just prior to accident
- (3) Deployed, details unknown
- (4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
- (5) Unknown if deployed
- (7) Nondeployed
- (9) Unknown

32. Other Than First Seat Frontal Air Bag Availability/Function (This Occupant Position) 0

- (0) Not equipped/not available
- (1) Air bag

*Non-functional*

(2) Air bag disconnected (specify):

- (3) Air bag not reinstalled
- (9) Unknown

*Specify type of "other" air bag present:*

33. Air Bag(s) Deployment, Other Than First Seat Frontal (This Occupant Position) 0

- (0) Not equipped with an "other" air bag
- (1) Deployed during accident (as a result of impact)
- (2) Deployed inadvertently just prior to accident
- (3) Deployed, details unknown
- (4) Deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
- (5) Unknown if deployed
- (7) Nondeployed
- (9) Unknown

34. Are There Indications of Air Bag System Failure? (This Occupant Position) 1

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify):

(9) Unknown

## FIRST SEAT FRONTAL AIR BAG SYSTEM EVALUATION

35. Had Vehicle Been in Previous Accident(s)? 1

- (0) Not equipped/not available  
(1) No previous accidents

Yes

- (2) Previous accident(s) without deployment(s)  
(3) One previous accident with deployment  
(4) More than one previous accident with at least one deployment  
(8) Previous accidents, unknown deployment status  
(9) Unknown

36. Type of Air Bag 1

- (0) Not equipped/not available  
(1) Original manufacturer installed system  
(2) Retrofitted air bag  
(3) Replacement air bag  
(8) Unknown type of air bag  
(9) Unknown

37. Had Any Prior Maintenance/Service Been Performed On This Air Bag System? 1

- (0) Not equipped/not available  
(1) No prior maintenance  
(2) Yes, prior maintenance (specify):  
\_\_\_\_\_  
(9) Unknown

38. Air Bag Deployment Accident Event Sequence Number 02

- (00) Not equipped/not available  
\_\_\_\_\_  
Code the accident event sequence number that initiated the air bag deployment  
(96) Deployed, unknown event  
(97) Not deployed  
(98) Unknown if deployed  
(99) Unknown

39. CDC For Air Bag Deployment Impact 1

- (0) Not equipped/not available  
(1) Highest delta V  
(2) Second highest delta V  
(3) Other non-coded delta V (specify):  
\_\_\_\_\_  
(6) Deployed, unknown event  
(7) Not deployed  
(8) Unknown if deployed  
(9) Unknown

40. Longitudinal Component of

Delta V For Air Bag

Deployment Impact

(+ 000) Not equipped/not available

*Code the value of the delta V for the impact that initiated the air bag deployment*

(-996) Deployment, unknown longitudinal Delta V

(-997) Not deployed

(-998) Unknown if deployed

(-999) Unknown

41. Did Air Bag Module Cover Flap(s) Open At Designated Tear Points? 2

- (0) Not equipped/not available  
(1) No  
(2) Yes  
(3) Deployed, unknown if flap(s) opened at designated tear points  
(7) Not deployed  
(8) Unknown if deployed  
(9) Unknown

42. Were Air Bag Module Cover Flap(s) Damaged? 2

- (0) Not equipped/not available  
(1) No  
(2) Yes (specify):  
(3) Deployed, unknown if air bag module cover flap(s) damaged  
(7) Not deployed  
(8) Unknown if deployed  
(9) Unknown

43. Was There Damage To The Air Bag? 01

- (00) Not equipped/not available  
(01) Not damaged

Yes - Air Bag Damage

- (02) Ruptured  
(03) Cut  
(04) Torn  
(05) Holed  
(06) Burned  
(07) Abraded  
(88) Other damage (specify):  
\_\_\_\_\_

- (95) Damaged, details unknown  
(96) Deployed, unknown if damaged  
(97) Not deployed  
(98) Unknown if deployed  
(99) Unknown

**FIRST SEAT FRONTAL AIR BAG SYSTEM  
EVALUATION** *continued*

44. Source of Air Bag Damage 01  
 (00) Not equipped/not available  
 (01) Not damaged  
 (02) Object worn by occupant, (specify):  
 (03) Object carried by occupant, (specify):  
 (04) Adaptive/assistive controls, (specify):  
 (05) Fire in vehicle  
 (06) Thermal burns  
 (07) Rescue or emergency efforts  
 (88) Other damage source (specify):  
 (95) Damaged, unknown source  
 (96) Deployed, unknown if damaged  
 (97) Not deployed  
 (98) Unknown if deployed  
 (99) Unknown
45. Was The Air Bag Tethered? 2  
 (0) Not equipped/not available  
 (1) No  
 (2) Yes (specify number of tether straps):  
4  
 (3) Deployed, unknown if tethered  
 (7) Not deployed  
 (8) Unknown if deployed  
 (9) Unknown
46. Did The Air Bag Have Vent Ports? 2  
 (0) Not equipped/not available  
 (1) No  
 (2) Yes (specify number of vent ports):  
2  
 (3) Deployed, unknown if vent ports present  
 (7) Not deployed  
 (8) Unknown if deployed  
 (9) Unknown
47. Was the Air Bag in this Occupant's Position Contacted by Another Occupant? 1  
 (0) Not equipped/not available  
 (1) No  
 (2) Yes (specify):  
 (3) Deployed, unknown if other occupant contact to air bag  
 (7) Not deployed  
 (8) Unknown if deployed  
 (9) Unknown
48. Was This Occupant Wearing Eye-wear? 2  
 (0) Not equipped/not available  
 (1) No  
 (2) Eyeglasses/sunglasses  
 (3) Contact lenses  
 (4) Deployed, unknown if eyewear worn  
 (7) Not deployed  
 (8) Unknown if deployed  
 (9) Unknown

**HEAD RESTRAINT AND SEAT EVALUATION**

49. Head Restraint Type/Damage by Occupant at This Occupant Position 3  
 (0) No head restraints  
 (1) Integral—no damage  
 (2) Integral—damaged during accident  
 (3) Adjustable—no damage  
 (4) Adjustable—damaged during accident  
 (5) Add-on—no damage  
 (6) Add-on—damaged during accident  
 (8) Other (specify):  
 (9) Unknown
50. Seat Type (this Occupant Position) 06  
 (00) Occupant not seated or no seat  
 (01) Bucket  
 (02) Bucket with folding back  
 (03) Bench  
 (04) Bench with separate back cushions  
 (05) Bench with folding back(s)  
 (06) Split bench with separate back cushions  
 (07) Split bench with folding back(s)  
 (08) Pedestal (i.e., column supported)  
 (09) Box mounted seat (i.e., van type)  
 (10) Other seat type (specify):  
 (99) Unknown
51. Seat Orientation (this Occupant Position) 1  
 (0) Occupant not seated or no seat  
 (1) Forward facing seat  
 (2) Rear facing seat  
 (3) Side facing seat (inward)  
 (4) Side facing seat (outward)  
 (8) Other (specify):  
 (9) Unknown
52. Seat Track Adjusted Position Prior To Impact 6  
 (0) Occupant not seated or no seat  
 (1) Non-adjustable seat track
- Adjustable Seat Track*  
 (2) Seat at forward most track position  
 (3) Seat between forward most and middle track positions  
 (4) Seat at middle track position  
 (5) Seat between middle and rear most track positions  
 (6) Seat at rear most track position  
 (9) Unknown

**HEAD RESTRAINT AND SEAT EVALUATION** *continued*

53. Seat Back Incline Prior and Post Impact 2 3  
 (00) Occupant not seated or no seat  
 (01) Not adjustable

*Upright prior to impact*

- (11) Moved to completely rearward position  
 (12) Moved to rearward midrange position  
 (13) Moved to slightly rearward position  
 (14) Retained pre-impact position  
 (15) Moved to slightly forward position  
 (16) Moved to forward midrange position  
 (17) Moved to completely forward position

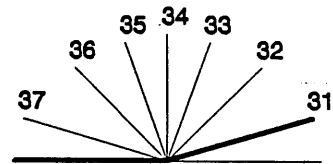
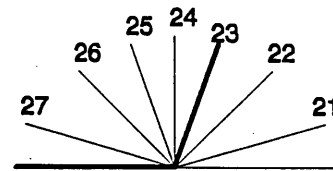
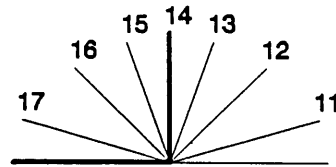
*Slightly reclined prior to impact*

- (21) Moved to completely rearward position  
 (22) Moved to rearward midrange position  
 (23) Retained pre-impact position  
 (24) Moved to upright position  
 (25) Moved to slightly forward position  
 (26) Moved to forward midrange position  
 (27) Moved to completely forward position

*Completely reclined prior to impact*

- (31) Retained pre-impact position  
 (32) Moved to rearward midrange position  
 (33) Moved to slightly rearward position  
 (34) Moved to upright position  
 (35) Moved to slightly forward position  
 (36) Moved to forward midrange position  
 (37) Moved to completely forward position

(99) Unknown



54. Seat Performance (this Occupant Position) 1  
 (0) Occupant not seated or no seat  
 (1) No seat performance failure(s)  
 (2) Seat adjusters failed  
 (3) Seat back folding locks or "seat back" failed (specify): \_\_\_\_\_  
 (4) Seat track/anchors failed  
 (5) Deformed by impact of occupant  
 (6) Deformed by passenger compartment intrusion, (specify): \_\_\_\_\_  
 (7) Combination of above (specify): \_\_\_\_\_  
 (8) Other (specify): \_\_\_\_\_  
 (9) Unknown



**CHILD SAFETY SEAT**

55. Child Safety Seat Make/Model 000  
 (000) No child safety seat  
 Applicable codes are found in your NASS CDS  
 Data Collection, Coding and Editing  
 (950) Built-in child safety seat  
 (997) Other make/model (specify):

(998) Unknown make/model  
 (999) Unknown if child safety seat used

56. Type of Child Safety Seat 0  
 (0) No child safety seat  
 (1) Infant seat  
 (2) Toddler seat  
 (3) Convertible seat  
 (4) Booster seat - with shield  
 (5) Booster seat - without shield  
 (7) Other type child safety seat (specify):  
 (8) Unknown child safety seat type  
 (9) Unknown if child safety seat used

57. Child Safety Seat Orientation 00  
 (00) No child safety seat

*Designed for Rear Facing for This Age/Weight*

(01) Rear facing  
 (02) Forward facing  
 (08) Other orientation (specify):

(09) Unknown orientation

*Designed For Forward Facing for This Age/Weight*

(11) Rear facing  
 (12) Forward facing  
 (18) Other orientation (specify):

(19) Unknown orientation

*Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight*

(21) Rear facing  
 (22) Forward facing  
 (28) Other orientation (specify):

(29) Unknown orientation

(99) Unknown if child safety seat used

58. Child Safety Seat Harness Usage 00

59. Child Safety Seat Shield Usage 00

60. Child Safety Seat Tether Usage 00

Note: Options below applicable to  
 Variables OA58-OA60.

(00) No child safety seat

*Not Designed With Harness/Shield/Tether*

(01) After market harness/shield/tether  
 added, not used  
 (02) After market harness/shield/tether used  
 (03) Child safety seat used, but no after market  
 harness/shield/tether added  
 (09) Unknown if harness/shield/tether  
 added or used

*Designed With Harness/Shield/Tether*

(11) Harness/shield/tether not used  
 (12) Harness/shield/tether used  
 (19) Unknown if harness/shield/tether used

*Unknown If Designed With Harness/Shield/Tether*

(21) Harness/shield/tether not used  
 (22) Harness/shield/tether used  
 (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

**INJURY CONSEQUENCES**61. Injury Severity (Police Rating) 4

- (0) O - No injury
- (1) C - Possible injury
- (2) B - Nonincapacitating injury
- (3) A - Incapacitating injury
- (4) K - Killed
- (5) U - Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

62. Treatment - Mortality 1

- (0) No treatment
- (1) Fatal
- (2) Fatal - ruled disease (specify):  
\_\_\_\_\_

*Nonfatal*

- (3) Hospitalization
- (4) Transported and released
- (5) Treatment at scene - nontransported
- (6) Treatment later
- (7) Treatment - other (specify):  
\_\_\_\_\_
- (8) Transported to a medical facility-unknown if treated
- (9) Unknown

63. Type Of Medical Facility (for Initial Treatment) 2

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):  
\_\_\_\_\_
- (9) Unknown

64. Hospital Stay 00

- (00) Not Hospitalized
- \_\_\_\_\_ Code the number of days (up through 60) that the occupant stayed in hospital.
- (61) 61 days or more
- (99) Unknown

65. Working Days Lost 62

- \_\_\_\_\_ Code the number of days (up through 60) that the occupant lost from work due to the accident
- (00) No working days lost
- (61) 61 days or more
- (62) Fatally injured
- (97) Not working prior to accident
- (99) Unknown

**STOP WORK HERE****VARIABLES 66-74****TO BE CODED BY THE ZONE CENTER**

**TO BE CODED BY THE ZONE CENTER****INJURY CONSEQUENCES**66. Time to Death 01

Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 + n up through 30 days = 60)

- (00) Not fatal  
(96) Fatal - ruled disease  
(99) Unknown

67. 1st Medically Reported Cause of Death 0768. 2nd Medically Reported Cause of Death 0069. 3rd Medically Reported Cause of Death 00

Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death

- (00) Not fatal or no additional causes  
(96) Mode of death given but specific injuries are not linked to cause of death. (specify):

(97) Other result (includes fatal ruled disease) (specify):

(99) Unknown

70. Number of Recorded Injuries for This Occupant 31

Code the actual number of injuries recorded for this occupant.

- (00) No recorded injuries  
(97) Injured, details unknown  
(99) Unknown if injured

**TRAUMA DATA**71. Glasgow Coma Scale (GCS) Score 97

(at Medical Facility)

- (00) Not injured  
(01) Injured - not treated at medical facility  
(02) No GCS Score at medical facility  
(03-15) Code the actual value of the initial GCS Score recorded at medical facility.  
(97) Injured, details unknown  
(99) Unknown if injured

72. Was the Occupant Given Blood? 9

(1) No - blood not given

(2) Yes - blood given

(specify units):

(9) Unknown if blood given

73. Arterial Blood Gases (ABG) - HCO<sub>3</sub> 01

(00) Not injured

(01) Injured, ABGs not measured or reported

(02-50) Code the actual value of the HCO<sub>3</sub>

(96) ABGs reported, HCO<sub>3</sub> unknown

(97) Injured, details unknown

(99) Unknown if injured

**BELT USE DETERMINATION**74. Primary Source of Belt Use Determination 1

(0) Not equipped/not available/destroyed or rendered inoperative

(1) Vehicle inspection

(2) Official injury data

(3) Driver/occupant interview

(8) Other (specify):

(9) Unknown if belt used



U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

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Form Approved  
O.M.B. No. 2127-0021

## OCCUPANT INJURY FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number

2. Case Number - Stratum

95 02

3. Vehicle Number

01

4. Occupant Number

01

### INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	A.I.S. - 90						Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number
		Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect				
1st	5. 1	6. 5	7. 4	8. 20	9. 10	10. 2	11. 8	12. 170	13. 1	14. 1	15. 00
2nd	16. 1	17. 5	18. 4	19. 20	20. 22	21. 2	22. 8	23. 170	24. 1	25. 1	26. 00
3rd	27. 1	28. 4	29. 5	30. 02	31. 42	32. 5	33. 3	34. 170 175	35. 1	36. 1	37. 00
4th	38. 1	39. 4	40. 5	41. 08	42. 04	43. 2	44. 4	45. 175	46. 1	47. 1	48. 00
5th	49. 1	50. 7	51. 9	52. 04	53. 02	54. 1	55. 1	56. 170	57. 1	58. 1	59. 00
6th	60. 1	61. 4	62. 4	63. 10	64. 06	65. 4	66. 4	67. 175	68. 1	69. 1	70. 00
7th	71. 1	72. 4	73. 2	74. 02	75. 10	76. 5	77. 4	78. 175	79. 1	80. 1	81. 00
8th	82. 1	83. 4	84. 4	85. 14	86. 10	87. 4	88. 3	89. 170 175	90. 1	91. 1	92. 00
9th	93. 1	94. 5	95. 4	96. 18	97. 10	98. 2	99. 1	100. 170 175	101. 1	102. 1	103. 00
10th	104. 1	105. 5	106. 4	107. 18	108. 22	109. 2	110. 2	111. 175 170	112. 1	113. 1	114. 00

HS Form 4338 (1/95)

This report is authorized by P.L. 89-563, Title 1, Section 106, 108, and 112. While you are not required to respond, your cooperation is needed to make the results of this data collection effort comprehensive, accurate, and timely.



## OCCUPANT INJURY DATA

A.I.S. - 90

Source of Injury Data	A.I.S. - 90					Aspect	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number	
	Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity						
11th	<u>1</u>	<u>2</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>7</u>	<u>170</u>	<u>1</u>	<u>1</u>	<u>00</u>
12th	<u>1</u>	<u>2</u>	<u>9</u>	<u>02</u>	<u>02</u>	<u>1</u>	<u>2</u>	<u>170</u>	<u>1</u>	<u>1</u>	<u>00</u>
13th	<u>1</u>	<u>2</u>	<u>9</u>	<u>02</u>	<u>02</u>	<u>1</u>	<u>4</u>	<u>170</u>	<u>1</u>	<u>1</u>	<u>00</u>
14th	<u>1</u>	<u>1</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>0</u>	<u>054</u>	<u>2</u>	<u>1</u>	<u>00</u>
15th	<u>1</u>	<u>1</u>	<u>9</u>	<u>02</u>	<u>02</u>	<u>1</u>	<u>0</u>	<u>054</u>	<u>2</u>	<u>1</u>	<u>00</u>
16th	<u>1</u>	<u>1</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>6</u>	<u>054</u>	<u>2</u>	<u>1</u>	<u>00</u>
17th	<u>1</u>	<u>3</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>5</u>	<u>170</u>	<u>1</u>	<u>1</u>	<u>00</u>
18th	<u>1</u>	<u>3</u>	<u>9</u>	<u>02</u>	<u>02</u>	<u>1</u>	<u>5</u>	<u>170</u>	<u>1</u>	<u>1</u>	<u>00</u>
19th	<u>1</u>	<u>5</u>	<u>4</u>	<u>02</u>	<u>10</u>	<u>1</u>	<u>9</u>	<u>170</u> <u>175</u>	<u>1</u>	<u>1</u>	<u>00</u>
20th	<u>1</u>	<u>4</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>4</u>	<u>175</u>	<u>1</u>	<u>1</u>	<u>00</u>
21st	<u>1</u>	<u>5</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>7</u>	<u>175</u> <u>170</u>	<u>1</u>	<u>1</u>	<u>00</u>
22nd	<u>1</u>	<u>2</u>	<u>9</u>	<u>02</u>	<u>02</u>	<u>1</u>	<u>8</u>	<u>170</u>	<u>1</u>	<u>1</u>	<u>00</u>
23rd	<u>1</u>	<u>4</u>	<u>9</u>	<u>02</u>	<u>02</u>	<u>1</u>	<u>2</u>	<u>170</u> <u>175</u>	<u>1</u>	<u>1</u>	<u>00</u>
24th	<u>1</u>	<u>4</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>1</u>	<u>170</u> <u>175</u>	<u>1</u>	<u>1</u>	<u>00</u>
25th	<u>1</u>	<u>7</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>2</u>	<u>170</u>	<u>1</u>	<u>1</u>	<u>00</u>

## OCCUPANT INJURY DATA SUPPLEMENT

Source of Injury Data	A.I.S. - 90						Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number		
	Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect				Injury Source	
26	1	8	9	04	02	1	1	004	2	1	00
27	1	8	9	02	02	1	1	004	2	1	00
28	1	8	9	04	02	1	1	004	2	1	00
29	1	8	9	04	02	1	2	004	2	1	00
30	1	7	9	06	02	1	2	170	2	1	00
31	1	7	9	02	02	1	2	170	2	1	00
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
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—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

## OCCUPANT INJURY CLASSIFICATION

Body Region	Specific Anatomic Structure	Level of Injury	Aspect
(1) Head		Specific injuries are assigned consecutive two-digit numbers beginning with 02.	(1) Right
(2) Face			(2) Left
(3) Neck	<u>Vessels, Nerves, Organs.</u>	To the extent possible, within the organizational framework of the AIS, 00 is assigned to an injury NFS as to severity or where only one injury is given in the dictionary for that anatomic structure. 99 is assigned to any injury NFS as to lesion or severity.	(3) Bilateral
(4) Thorax	<u>Bones, Joints</u> are assigned consecutive two digit numbers beginning with 02.		(4) Central
(5) Abdomen			(5) Anterior
(6) Spine			(6) Posterior
(7) Upper Extremity			(7) Superior
(8) Lower Extremity			(8) Inferior
(9) Unspecified	The exceptions to this rule apply to:		(9) Unknown
			(0) Whole region
<b>Type of Anatomic Structure</b>	<u>Whole Area</u>		
(1) Whole Area	(02) Skin - Abrasion	<b>Abbreviated Injury Scale</b>	
(2) Vessels	(04) Skin - Contusion		
(3) Nerves	(06) Skin - Laceration		
(4) Organs (includes Muscles/ligaments)	(08) Skin - Avulsion		
(5) Skeletal (includes joints)	(10) Amputation		
(6) Head - LOC	(20) Burn		
(9) Skin	(30) Crush		
	(40) Degloving		(1) Minor Injury
	(50) Injury - NFS		(2) Moderate Injury
	(90) Trauma, other than mechanical		(3) Serious Injury
		(4) Severe Injury	
		(5) Critical Injury	
		(6) Maximum (untreatable)	
		(7) Injured, unknown severity	
	<u>Head - LOC</u>		
	(02) Length of LOC		
	(04) Level		
	(06) of		
	(08) Consciousness		
	(10) Concussion		
	<u>Spine</u>		
	(02) Cervical		
	(04) Thoracic		
	(06) Lumbar		

SOURCE OF INJURY DATA	INJURY SOURCE CONFIDENCE LEVEL	DIRECT/INDIRECT INJURY
<u>OFFICIAL RECORDS</u>		
(1) Autopsy records with or without hospital/medical records	(1) Certain	(1) Direct contact injury
(2) Hospital/medical records other than emergency room (e.g., discharge summary)	(2) Probable	(2) Indirect contact injury
(3) Emergency room records only (including associated X-rays or other lab reports)	(3) Possible	(3) Noncontact injury
(4) Private physician, walk-in or emergency clinic	(9) Unknown	(7) Injured, unknown source
<u>UNOFFICIAL RECORDS</u>		
(5) Lay coroner report		
(6) E.M.S. personnel		
(7) Interviewee		
(8) Other source (specify): _____		
(9) Police		

## INJURY SOURCES

### FRONT

- (001) Windshield
- (002) Mirror
- (003) Sunvisor
- (004) Steering wheel rim
- (005) Steering wheel hub/spoke
- (006) Steering wheel (combination of codes 004 and 005)
- (007) Steering column, transmission selector lever, other attachment
- (008) Cellular telephone or CB radio
- (009) Add on equipment (e.g., tape deck, air conditioner)
- (010) Left instrument panel and below
- (011) Center instrument panel and below
- (012) Right instrument panel and below
- (013) Glove compartment door
- (014) Knee bolster
- (015) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (016) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (017) Windshield reinforced by exterior object (specify): \_\_\_\_\_
- (019) Other front object (specify): \_\_\_\_\_

### LEFT SIDE

- (051) Left side interior surface, excluding hardware or armrests
- (052) Left side hardware or armrest
- (053) Left A (A1/A2)-pillar
- (054) Left B-pillar
- (055) Other left pillar (specify): \_\_\_\_\_
- (056) Left side window glass
- (057) Left side window frame
- (058) Left side window sill
- (059) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (060) Other left side object (specify): \_\_\_\_\_

### RIGHT SIDE

- (101) Right side interior surface, excluding hardware or armrests

- (102) Right side hardware or armrest
- (103) Right A (A1/A2)-pillar
- (104) Right B-pillar
- (105) Other right pillar (specify): \_\_\_\_\_
- (106) Right side window glass
- (107) Right side window frame
- (108) Right side window sill
- (109) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (110) Other right side object (specify): \_\_\_\_\_

### INTERIOR

- (151) Seat, back support
- (152) Belt restraint webbing/buckle
- (153) Belt restraint B-pillar or door frame attachment point
- (154) Other restraint system component (specify): \_\_\_\_\_
- (155) Head restraint system
- (160) Other occupants (specify): \_\_\_\_\_
- (161) Interior loose objects
- (162) Child safety seat (specify): \_\_\_\_\_
- (163) Other interior object (specify): \_\_\_\_\_

### AIR BAG

- (170) Air bag-driver side
- (171) Air bag-driver side and eyewear
- (172) Air bag-driver side and jewelry
- (173) Air bag-driver side and object held
- (174) Air bag-driver side and object in mouth
- (175) Air bag compartment cover-driver side
- (176) Air bag compartment cover-driver side and eyewear
- (177) Air bag compartment cover-driver side and jewelry
- (178) Air bag compartment cover-driver side and object held
- (179) Air bag compartment cover-driver side and object in mouth
- (180) Air bag-passenger side
- (181) Air bag-passenger side and eyewear
- (182) Air bag-passenger side and jewelry

- (183) Air bag-passenger side and object held
- (184) Air bag-passenger side and object in mouth
- (185) Air bag compartment cover-passenger side
- (186) Air bag compartment cover-passenger side and eyewear
- (187) Air bag compartment cover-passenger side and jewelry
- (188) Air bag compartment cover-passenger side and object held
- (189) Air bag compartment cover-passenger side and object in mouth
- (190) Other air bag (specify): \_\_\_\_\_
- (195) Other air bag compartment cover (specify): \_\_\_\_\_

### ROOF

- (201) Front header
- (202) Rear header
- (203) Roof left side rail
- (204) Roof right side rail
- (205) Roof or convertible top

### FLOOR

- (251) Floor (including toe pan)
- (252) Floor or console mounted transmission lever, including console
- (253) Parking brake handle
- (254) Foot controls including parking brake

### REAR

- (301) Backlight (rear window)
- (302) Backlight storage rack, door, etc.
- (303) Other rear object (specify): \_\_\_\_\_

### ADAPTIVE (ASSISTIVE) DRIVING EQUIPMENT

- (401) Hand controls for braking/acceleration
- (402) Steering control devices (attached to OEM steering wheel)
- (403) Steering knob attached to steering wheel
- (405) Replacement steering wheel (i.e., reduced diameter)
- (406) Joy stick steering controls
- (407) Wheelchair tie-downs
- (408) Modification to seat belts, (specify): \_\_\_\_\_
- (409) Additional or relocated switches, (specify): \_\_\_\_\_
- (410) Raised roof

- (411) Wall mounted head rest (used behind wheel chair)
- (412) Other adaptive device (specify): \_\_\_\_\_

### EXTERIOR OF OCCUPANT'S VEHICLE

- (451) Hood
- (452) Outside hardware (e.g., outside mirror, antenna)
- (453) Other exterior surface or tires (specify): \_\_\_\_\_
- (454) Unknown exterior objects

### EXTERIOR OF OTHER MOTOR VEHICLE

- (501) Front bumper
- (502) Hood edge
- (503) Other front of vehicle (specify): \_\_\_\_\_
- (504) Hood
- (505) Hood ornament
- (506) Windshield, roof rail, A-pillar
- (507) Side surface
- (508) Side mirrors
- (509) Other side protrusions (specify): \_\_\_\_\_
- (510) Rear surface
- (511) Undercarriage
- (512) Tires and wheels
- (513) Other exterior of other motor vehicle (specify): \_\_\_\_\_
- (514) Unknown exterior of other motor vehicle

### OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT

- (551) Ground
- (598) Other vehicle or object (specify): \_\_\_\_\_
- (599) Unknown vehicle or object

### NONCONTACT INJURY

- (601) Fire in vehicle
- (602) Flying glass
- (603) Other noncontact injury source (specify): \_\_\_\_\_
- (604) Air bag exhaust gases
- (697) Injured, unknown source